

# TRANSCRIPT OF RECORD

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Supreme Court of the United States

OCTOBER TERM, 1938

No. 166

THE TOLEDO PRESSED STEEL COMPANY,  
PETITIONER,

vs.

STANDARD PARTS, INC.

No. 167

THE TOLEDO PRESSED STEEL COMPANY,  
PETITIONER,

vs.

HUEBNER SUPPLY COMPANY

ON WRITS OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT  
OF APPEALS FOR THE SIXTH CIRCUIT

---

PETITION FOR CERTIORARI FILED JULY 1, 1938.

CERTIORARI GRANTED NOVEMBER 21, 1938.

IN THE  
United States Circuit Court of Appeals  
SIXTH CIRCUIT

CONSOLIDATED CAUSES

No. 1408 In Equity

STANDARD PARTS, INC.,

*Appellant,*

VS.

THE TOLEDO PRESSED STEEL COMPANY,

*Appellee.*

No. 1412 In Equity

HUEBNER SUPPLY COMPANY,

*Appellant,*

VS.

THE TOLEDO PRESSED STEEL COMPANY,

*Appellee.*

Appeal from the United States District Court, for the  
Northern District of Ohio, Western Division

**TRANSCRIPT OF RECORD  
TRIAL PLEADINGS AND TESTIMONY**

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IN THE  
**District Court of the United States**

NORTHERN DISTRICT OF OHIO,  
WESTERN DIVISION, SS.

---

**C A P T I O N**

RECORD of the proceedings of the District Court of the United States within and for the Western Division of the Northern District of Ohio, in the causes and matters hereinafter stated, the same being finally disposed of at a regular term of said Court begun and held at the City of Toledo, in said District, on the last Tuesday in April, being the 30th day of said month in the year of our Lord One Thousand Nine Hundred and Thirty-five, and of the Independence of the United States the One Hundred and Fifty-ninth, to-wit: on Saturday, the 29th day of June, A. D., 1935.

Present: Honorable George P. Hahn, United States District Judge.

**CONSOLIDATED CAUSES**

No. 1408 In Equity.

THE TOLEDO PRESSED STEEL COMPANY,

VS.

STANDARD PARTS, INC.

---

No. 1412 In Equity.

THE TOLEDO PRESSED STEEL COMPANY,

VS.

HUBNER SUPPLY COMPANY

---

Said action numbered 1408 In Equity was commenced on the 16th day of January, A. D., 1934, and said action numbered 1412 In Equity was commenced on the

*Bill of Complaint.*

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26th day of January, A. D., 1934, and proceeded to final disposition at the term and day above written, and, during the progress thereof, pleadings and papers were filed, process was issued and returned, and orders of the Court were made and entered in the order and on the dates hereinafter stated, to-wit:

IN THE UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF OHIO  
WESTERN DIVISION

In Equity No. 1408

THE TOLEDO PRESSED STEEL COMPANY,

*Plaintiff,*

VS.

STANDARD PARTS, INC.,

*Defendant.*

**BILL OF COMPLAINT**

(Filed January 16, 1934)

The plaintiff, for its bill of complaint, alleges:

**I.**

That plaintiff is a corporation duly organized and existing under and by virtue of the laws of the State of Ohio, and is a citizen of Ohio, having its principal place of business at Toledo in said State.

**II.**

That, as plaintiff is informed and believes, and therefore avers, defendant, Standard Parts, Inc., is a corporation organized and existing under and by virtue



*Bill of Complaint.*

of the laws of the State of Ohio, and is a citizen of Ohio, and has its office and principal place of business at Toledo in said State.

## III.

That this is a suit in equity arising under the patent laws of the United States for infringement of United States Letters Patent No. 1,732,708, issued to plaintiff on October 22nd, 1929.

## IV.

That heretofore and before the 26th day of December, 1928, Joseph E. Withrow and Lyman W. Close, both citizens of the United States, residing at Toledo in the State of Ohio, were the original, first and joint inventors of a certain new and useful Burner, not known or used by others in this country before their invention or discovery thereof, and not patented or described in any Letters Patent or printed publication in this or any foreign country before their invention or discovery thereof or more than two years prior to their application for the hereinafter mentioned Letters Patent, and not in public use or on sale in this country for more than two years prior to the date of their said application for Letters Patent in the United States, and not patented in any foreign country upon an application filed more than twelve months prior to their said application for Letters Patent, and not abandoned to the public.

## V.

That on or about December 26th, 1928, the said Joseph E. Withrow and Lyman W. Close, being as aforesaid the original, first and joint inventors of said burner, made due application to the Commissioner of Patents of the United States for Letters Patent of the United States for said invention, and by an instrument in writing, duly executed and delivered by them, assigned and transferred the entire right, title and interest in and to said invention and Letters Patent to plaintiff herein, The Toledo Pressed Steel Company, and authorized and requested the Commissioner of Patents to issue the Letters Patent for said invention to said assignee, and having in all respects duly complied with the conditions and requisitions of the Acts of Congress in such cases made and provided, on the 22nd day of October, 1929, Letters Patent of the United States for said invention, bearing

*Bill of Complaint.*

No. 1,732,708, signed, sealed and executed in due form of law, were issued and delivered over to plaintiff, as the assignee of said Joseph E. Withrow and Lyman W. Close, whereby there was secured unto plaintiff and its successors and assigns for the term of seventeen (17) years from said 22nd day of October, 1929, the sole and exclusive right of making, using, selling and granting to others the right to make, use and sell, said burners, or as by said Letters Patent, or a duly authenticated copy thereof, herein court produced and shown unto your Honors, will more fully and at large appear, a copy of said Letters Patent being attached hereto, and marked "Plaintiff's Exhibit A", and forming a part hereof.

## VI.

That plaintiff, is now and has been continuously since the issuance of said Letters Patent No. 1,732,708, the owner thereof.

## VII.

That plaintiff further states that the invention as aforesaid is of great utility and value; that burners made in accordance with the invention of said Letters Patent, have been sold by it in very large and constantly increasing quantities; that the invention covered by said Letters Patent is of great importance and value to it; that Plaintiff has expended large sums of money for advertising burners made in accordance with the invention of said Letters Patent; and that Plaintiff has been and now is ready to supply the trade and public with burners made by and in accordance with the invention of said Letters Patent.

## VIII.

That plaintiff further states that the public has generally acquiesced in the usefulness of said improvement and has generally acknowledged and acquiesced in the rights of plaintiff with respect to said invention, and in the validity of said Letters Patent.

## IX.

That upon information and belief, prior to the commencement of this suit and since the granting of said Letters Patent, the defendant herein named, well knowing the facts as herein set forth, has wilfully infringed said Letters Patent against the will of plaintiff and is



*Bill of Complaint.*

violation of plaintiff's rights; has been and is now infringing said Letters Patent within the Northern District of Ohio by using and selling, and causing to be used or sold within the Northern District of Ohio and elsewhere in the United States, burners, made in accordance with the invention disclosed, described and claimed in the said Letters Patent and infringement thereof, all against plaintiff's will and without plaintiff's license and consent notwithstanding notice of said Letters Patent being displayed on each burner manufactured and sold or offered for sale by plaintiff; that said defendant is threatening to continue and to increase such acts of infringement; that its infringing acts have the effect of inducing others to infringe said Letters Patent, and that by said infringing acts defendant has wrongfully converted to itself trade and profits which plaintiff would otherwise have received and enjoyed as to the amount of which plaintiff is uninformed and prays discovery, and whereby plaintiff has been caused great and irreparable damage and injury, and defendant will, if it is allowed to continue such infringement, further irreparably damage and injure the plaintiff, depreciate or destroy the value of the exclusive rights to which plaintiff is entitled under said Letters Patent, and deprive the plaintiff of the benefit and advantages thereof.

## X.

That plaintiff is informed and believes, and therefore avers, that the said defendant is prepared and ready to continue such infringement; and unless it is restrained from so doing, plaintiff will suffer irreparable injury, for the loss of which there is no adequate remedy at law.

Wherefore, plaintiff prays:

1. That a perpetual injunction may be issued enjoining and restraining said defendant, its officers, agents, attorneys, servants, workmen and employees, and each of them, and all those in privity therewith, from in any way infringing directly or indirectly, or contributing to the infringement of said Letters Patent or any of the claims thereof.

2. That defendant be ordered and decreed to deliver to plaintiff each and all of the infringing burners or parts thereof which it has in its possession or under its control, or that the same may be destroyed, or that they may be delivered into court, or be impounded by



*Bill of Complaint.*

the court for such final disposition as to the court may seem just or proper.

3. That defendant be required to account for and pay over to plaintiff such gains and profits as have accrued or arisen or been earned or received by the said defendant, and of such gains and profits as would have accrued to plaintiff but for the unlawful doings of said defendant and all damages plaintiff has sustained thereby, and that the court will assess the same or cause them to be assessed under its direction and will increase the same in its discretion as provided by law.

4. That defendant be required to answer this bill of complaint, but not under oath, answer under oath being hereby expressly waived.

5. That defendant may be decreed to pay the costs, charges and disbursements in this suit and that plaintiff may have such other and further relief as the circumstances and equity of the case may require.

The Toledo Pressed Steel Company

By Joseph E. Withrow,

(Seal)

President

Owen & Owen,

Solicitors and Counsel for Plaintiff.

**Verification**

State of Ohio, County of Lucas, ss.

On this 13th day of January, 1934, before me personally appeared Joseph E. Withrow, who being by me first duly sworn, deposes and says that he is President of The Toledo Pressed Steel Company, the plaintiff hererin; that he has read the foregoing bill of complaint by him subscribed, and knows the contents thereof, and that the same is true to his own knowledge except as to matters therein stated to be alleged on information and belief, and as to these matters, he believes it to be true.

Mary E. Dukes,

(Notarial Seal)

Notary Public.

Plaintiff's Exhibit "A" attached to Bill of Complaint, Patent No. 1,732,708, Joseph E. Withrow and Lyman W. Close, October 22, 1929, (Assignors to The Toledo Pressed Steel Co. Burner). See Plaintiff's Exhibit No. 1, "File Wrapper No. 1,732,708, Withrow."

**ANSWER**

(Filed February 15, 1934)

Equity No. 1408.

Comes now the above-named defendant and for its answer to the Bill of Complaint herein, respectfully states:

Paragraphs Nos. 1 to 10 hereof refer to and are answers to Paragraphs I to X of the Bill of Complaint.

1. Defendant has no knowledge of the corporate organization of plaintiff, and therefore denies the allegations of Paragraph I of the Bill, and asks that the plaintiff be put upon strict proof thereof.

2. Defendant admits the allegations of Paragraph II of the Bill.

3. Defendant admits the allegations of Paragraph III of the Bill.

4. Defendant denies the allegations of Paragraph IV of the Bill, and particularly denies that the alleged inventors were the first or the joint inventors of the burner involved in this case, and avers that said burner was known and used by others in this country before their alleged invention or discovery thereof, and was patented and described in Letters Patent and in printed publications in this and in foreign countries before their alleged invention or discovery thereof, and more than two years prior to their application referred to, and avers that said burner was in public use and on sale in this country more than two years prior to their said application. As to whether said device was patented in foreign countries and when, the defendant is not informed, and denies the allegations concerning foreign patenting and foreign applications.

Defendant avers that said alleged invention was abandoned by the applicants to the public.

5. Defendant admits the making of the application as alleged in Paragraph V of the Bill, and admits the issue of Patent No. 1,732,708 to the plaintiff, but denies that the plaintiff by reason of said issue secured any right to make, use or sell or to grant to others the right to make, use or sell said burners.

6. Defendant denies the allegation of Paragraph VI of the Bill.

7. Defendant denies that the alleged invention is of any utility or value, that plaintiff has sold burners made

in accordance therewith, that the alleged invention is of great importance and value to plaintiff, that plaintiff has expended large sums of money for advertising said burners, and that plaintiff is now ready to supply the trade with the burners.

8. Defendant denies that the public has acquiesced in the usefulness of the alleged invention and has particularly acknowledged and acquiesced in the plaintiff's rights with respect thereto or in the validity of said patent.

9. Defendant denies that it has infringed willfully or otherwise upon any rights of the plaintiff represented by the patent in suit or otherwise or that it is now infringing thereon.

Defendant further denies that the plaintiff has placed proper notice of said patent on the burners made and sold or offered for sale by it.

Defendant denies that it continues or threatens to continue any act of infringement and denies that any acts of infringement and denies that any acts of it have the effect of inducing others to infringe.

Defendant further denies that it has wrongfully converted to itself any trade or profits, which plaintiff would otherwise have received or enjoyed, and denies that defendant has caused any damage or injury to the plaintiff or is about to continue any acts which will injure or damage the plaintiff or affect any value of any rights plaintiff is entitled to under said patent or deprive the plaintiff of any benefit or advantage thereof.

10. Defendant denies that it is prepared and ready to continue any infringement on any right of plaintiff.

11. Defendant avers that said Letters Patent in suit are invalid and void and do not involve invention or patentable subject matter, because in view of the common public knowledge disclosed by the state of the art prior to the alleged invention by plaintiff's patentees, it did not require or involve invention to produce the device covered by plaintiff's patent, but that on the contrary the production of such device involved merely mechanical skill and such ordinary anticipation and utilization of well known parts as was within the common knowledge and ability of any person possessing the ordinary average skill and knowledge in the burner industry.

12. Defendant further avers that the Letters Patent in suit are invalid and void as not involving inven-



tion or patentable subject matter in view of the art existing prior to the date of the alleged invention by plaintiff's patentees, that it required no invention to produce the device of the patent in suit, and that said device did not differ in any patentable respect from what was known and used in this country by the patentees of the following patents and from what was patented and described in said patents:

### UNITED STATES LETTERS PATENT

Jones and Collins	No. 56,949	August	7, 1866
Heath	No. 66,021	June	25, 1867
Drott	No. 116,573	July	4, 1871
Baldwin	No. 120,613	November	7, 1871
Hathaway	No. 147,496	February	17, 1874
Billingham	No. 181,030	August	15, 1876
Beckie	No. 192,130	June	19, 1877
Heston	No. 270,587	January	16, 1883
Blake	No. 453,335	June	2, 1891
Warner	No. 826,297	July	17, 1906
Ratz and Laethe	No. 1,009,184	November	21, 1911
Kahn	No. 1,175,527	March	14, 1916

and others now to the defendant unknown, which defendant respectfully prays right to plead when known.

That the only patents cited by the Patent Office or mentioned by it or by Withrow and Close during the prosecution in the Patent Office of the application for the patent in suit were:

### UNITED STATES LETTERS PATENT

Hathaway	No. 147,496	February	17, 1874
Lilley	No. 716,845	December	23, 1902
Lucas	No. 1,433,632	October	31, 1922
Greene	No. 20,153	May	4, 1858
Jacobs	No. 83,171	October	20, 1868
White	No. 106,753	August	23, 1870
Sawyer	No. 187,915	February	27, 1877
Coulter	No. 925,563	June	22, 1909
Dyott	No. 116,573	July	4, 1871
Elton et al	No. 599,525	February	22, 1898
Conklin	No. 536,603	April	2, 1895
Patterson	No. 575,903	January	26, 1897
Bentote	No. 753,952	March	8, 1904
Sickel	No. 6,624	August	7, 1849
Wales	No. 22,465	December	28, 1858

*Answer.*

Moore	No. 105,589	July	19, 1870
Rosencrantz	No. 22,536	January	4, 1859
Lecomte	No. 703,661	July	1, 1902
Sheldon	No. 254,711	March	7, 1882
Follett	No. 241,344	May	10, 1881
Heath	No. 1,038,882	September	17, 1912
Spear	No. 840,025	January	1, 1907

and the following foreign patents

German patent No. 87,781 to Schulke

British patent No. 164,865

Norwegian patent No. 4,551

Swedish patent No. 30,359

Swedish patent No. 36,818

13. That the use of exposed flame burners or flares as signals on highways and railroads and construction jobs is very old and has been practiced for example more than two years prior to the application for the patent in suit by the

Chicago, Rock Island and Pacific Railway Company

Chicago, Burlington & Quincy Railroad Company

Chicago Great Western Railroad Company

Chicago, Milwaukee, St. Paul & Pacific Railroad Co.

Chicago and Northwestern Railroad Company

Pennsylvania Railroad Company

Baltimore and Ohio Railroad Company

and their respective predecessors.

Wherefore, defendant prays that this cause be dismissed at plaintiff's costs.

Standard Parts, Inc.,

By Bair, Freeman & Sinclair,

Its Attorneys

W. P. Bair,  
Of Counsel.

**PLAINTIFF'S INTERROGATORIES**

(Filed March 8, 1934)

Now comes the plaintiff, and, pursuant to Equity Rule 58, propounds the following interrogatories to be answered under oath by the President or other duly qualified officer of defendant having knowledge of the matters inquired about in the interrogatories:

1. Which of the numerous prior art patents referred to in paragraph 12 of the Answer will be relied on
  - (a) for anticipation of the patent in suit, and
  - (b) for showing want of invention in the patent in suit?
2. Furnish drawings or other illustrations of each of the exposed flame burners or flares referred to in paragraph 13 of the Answer and of which defendant intends to make any use at the hearing of this cause, such drawings or illustrations to show the burner construction of such devices and to identify the respective use and date of use thereof.
3. Did the defendant, subsequent to October 22, 1929, and prior to the filing of the bill of complaint herein, use and/or sell within the Northern District of Ohio, Western Division, burners or torches like those shown in the illustration attached hereto as Exhibit B?
4. When did defendant first commence the sale or handling of burners or torches like those shown in Exhibit B?
5. From whom does or did defendant obtain its torches like those shown in Exhibit B attached hereto?
6. State if this suit is being defended by defendant at its own expense, and if not, by whom.

Respectfully submitted,

Owen & Owen,  
Attorneys for Plaintiff.

Toledo, Ohio, March 8th, 1934.

NOTE—Exhibit B is reproduced at page 153, *infra*.



*Answer to Interrogatories.***ANSWER TO INTERROGATORIES**

(Filed September 15, 1934)

Comes now the defendant, Standard Parts, Inc., and by way of answer to the Interrogatories of the plaintiff heretofore filed herein, and in accordance with the letter heretofore written Owen & Owen, attorneys for plaintiff on April 18, 1934, the answers are as follows:

1. (a)

**CLAIM 1**

Billingham	181,030
Reekie	192,130
Dyott	116,573

and also

Almond	193,796	August 7, 1877
--------	---------	----------------

and

Flora	755,864	March 29, 1904
-------	---------	----------------

**CLAIM 2**

Same as Claim 1.

**CLAIM 5**

Same as Claim 1.

**CLAIM 7**

Same as Claim 1, except Dyott.

**CLAIM 12**

Same as Claim 7.

**CLAIM 13**

Same as Claim 7.

1. (b)

All the patents mentioned in the Answer and the additional ones to

Almond, No. 193,796, August 7, 1877, and  
Flora, No. 755,864, March 29, 1904

2. Defendant is not in position at the present time to furnish the drawings requested, but will furnish drawings of any exposed flameburners or flares referred to at the trial as constituting anticipation, at least twenty days in advance of the trial in accordance with U. S. Code, Title 35, Section 69.

*Answer to Interrogatories.*

---

3. Yes.
4. About the last of October, 1933.
5. The Bolser Corporation.
6. This suit is being defended by defendant by counsel employed at the expense of The Bolser Corporation to defend the suit on behalf of defendant.

Standard Parts, Inc.,  
By Halloway, Peppers & Romanoff,  
Its Attorneys  
and by Bair, Freeman & Sinclair,  
Its Attorneys

W. P. Bair,  
Of Counsel.

Service of the above Answer to Interrogatories and receipt of copy thereof acknowledged this 14th day of September, 1934.

Owen & Owen,  
Attorneys for Plaintiff.

*Further Answer to Plaintiff's Interrogatories.*

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**FURTHER ANSWER TO PLAINTIFF'S  
INTERROGATORIES**

(Filed April 11, 1935)

Comes now the defendant, Standard Parts, Inc., and notes that Claim 11 was inadvertently omitted from the Answer 1-(a) in the Answers to the Interrogatories heretofore filed.

Plaintiff's Counsel were notified by letter on April 18, 1934, that defendant would rely upon the same patents as anticipating Claim 11 that were relied upon as against Claim 1.

Defendant therefore amends its answer to the Interrogatories by stating

"Defendant will rely on the same patents as anticipating Claim 11 as are relied upon as against Claim 1, except Dyott."

Respectfully,

Standard Parts, Inc.,

By Bair, Freeman & Sinclair,  
Halloway, Peppers & Romanoff,

Its Attorneys

W. P. Bair,  
Of Counsel.

Service of the above Further Answer to Plaintiff's Interrogatories, and receipt of copy thereof, acknowledged this 9th day of April, 1935.

Owen & Owen,  
Attorneys for Plaintiff.



*Bill of Complaint.*

IN THE UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF OHIO  
WESTERN DIVISION

In Equity No. 1412

THE TOLEDO PRESSED STEEL COMPANY,  
*Plaintiff,*

VS.

HAEBNER SUPPLY COMPANY,  
*Defendant.*

**BILL OF COMPLAINT**

(Filed January 26, 1934)

The plaintiff, for its bill of complaint, alleges:

II.

That, as plaintiff is informed and believes, and therefore avers, defendant, Haebner Supply Company, is a corporation organized and existing under and by virtue of the laws of the State of Ohio, and is a citizen of Ohio, and has its office and principal place of business at Toledo, in said State.

--- "Paragraphs I, III, IV, V, VI, VII, VIII, IX and X, and the prayer in this case are exactly the same as the corresponding paragraphs and prayer in the Bill of Complaint in Equity No. 1408." ---

The Toledo Pressed Steel Company

By Joseph E. Withrow,  
President.

(Seal)

Owen & Owen,

Solicitors and Counsel for Plaintiff.

**VERIFICATION**

State of Ohio, County of Lucas, ss.

On this 24th day of January, 1934, before me personally appeared Joseph E. Withrow, who being by me first duly sworn, deposes and says that he is President of The Toledo Pressed Steel Company, the plaintiff herein; that he has read the foregoing bill of complaint to him subscribed, and knows the contents thereof, and that the same is true to his own knowledge except as to matters therein stated to be alleged on information and belief, and as to these matters, he believes it to be true.

Mary E. Dukes,

(Notarial Seal)

Notary Public.

Plaintiff's Exhibit "A" attached to Bill of Complaint, Patent No. 1,732,708, Joseph E. Withrow and Lyman W. Close, October 22, 1929, (Assignors to The Toledo Pressed Steel Co. Burner). See Plaintiff's Ex-

*Answer.*

IN THE UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF OHIO  
WESTERN DIVISION

In Equity No. 1412.

THE TOLEDO PRESSED STEEL COMPANY,

*Plaintiff,*

vs.

HUEBNER SUPPLY COMPANY,

*Defendant.*

**ANSWER**

(Filed February 26, 1934)

Comes now the above-named defendant, and for answer to the Bill of Complaint herein respectfully states:

--- "Paragraphs I to 13 of the Answer in Equity No. 1412, are exactly the same as the corresponding Paragraphs of the Answer in Equity No. 1408."

Huebner Supply Company,

*Defendant.*

By Holloway, Peppers & Romanoff,  
and Bair, Freeman & Sinclair,

*Its Attorneys*

W. P. Bair,

Of Counsel.

Des Moines, Iowa, February 22, 1934.

Service of the foregoing Answer, and receipt copy thereof acknowledged this 26th day of February 1934.

Owen & Owen,

*Attorneys for Plaintiff.*

*Plaintiff's Interrogatories.***PLAINTIFF'S INTERROGATORIES**

(Filed March 9, 1934)

Now comes the plaintiff, and, pursuant to Equity Rule 58, propounds the following interrogatories to be answered under oath by the President or other duly qualified officer of defendant having knowledge of the matters inquired about in the interrogatories:

1. Which of the numerous prior art patents referred to in paragraph 12 of the Answer will be relied on
  - (a) for anticipation of the patent in suit, and
  - (b) for showing want of invention in the patent in suit?
2. Furnish drawings or other illustrations of each of the exposed flame burners or flares referred to in paragraph 13 of the Answer and of which defendant intends to make any use at the hearing of this cause, such drawings or illustrations to show the burner construction of such devices and to identify the respective use and date of use thereof.
3. Did the defendant, subsequent to October 22, 1929, and prior to the filing of the bill of complaint herein, use and/or sell within the Northern District of Ohio, Western Division, burners or torches like those shown in the circular attached hereto as Exhibit B?
4. When did defendant first commence the sale or handling of burners or torches like those shown in Exhibit B?
5. From whom does or did defendant obtain its torches like those shown in Exhibit B attached hereto?
6. State if this suit is being defended by defendant at its own expense, and if not, by whom.

Respectfully submitted,

Owen & Owen,  
Attorneys for Plaintiff.

Toledo, Ohio, March 8th, 1934.

NOTE—Exhibit B is reproduced at page 154, infra.



*Answer to Interrogatories.***ANSWER TO INTERROGATORIES**

(Filed September 15, 1934)

(September 15, 1934—Leave to file granted—  
Geo. P. Hahn, D. J.)

Comes now the defendant, Huebner Supply Company, and in answer to the Interrogatories of the plaintiff heretofore filed, states as follows the answers to the Interrogatories—

1. (a)

**CLAIM 1**

Billingham	181,030
Reekie	192,130
Dyott	116,573

and also

Almond	193,796	August 7, 1877
--------	---------	----------------

and

Flora	755,864	March 29, 1904
-------	---------	----------------

**CLAIM 2**

Same as Claim 1.

**CLAIM 5**

Same as Claim 1.

**CLAIM 7**

Same as Claim, except Dyott.

**CLAIM 12**

Same as Claim 7.

**CLAIM 13**

Same as Claim 7.

1. (b)

All the patents mentioned in the Answer and the additional ones to

Almond	No. 193,796	August 7, 1877
--------	-------------	----------------

and

Flora	No. 755,864	March 29, 1904
-------	-------------	----------------

2. Defendant is not in position at the present time to furnish the drawings requested, but will furnish drawings of any exposed flame burners or flares referred to

*Answer to Interrogatories.*

---

at the trial as constituting anticipations, at least twenty days in advance of the trial in accordance with U. S. Code, Title 35, Section 69.

3. Yes.

4. Early part of December, 1933.

5. Kari-Keen Manufacturing Co.

6. This suit is being defended by defendant by counsel employed at the expense of the Kari-Keen Manufacturing Co. to defend the suit on behalf of defendant.

Huebner Supply Company,  
By Holloway, Peppers & Romanoff,  
and by Bair, Freeman & Sinclair,  
Its Attorneys

W. P. Bair,  
Of Counsel.

Service of the above Answer to Interrogatories and receipt of copy thereof acknowledged this 14th day of September, 1934.

Owen & Owen,  
Attorneys for Plaintiff.

*Further Answer to Plaintiff's Interrogatories.*

---

**FURTHER ANSWER TO PLAINTIFF'S  
INTERROGATORIES**

(Filed April 11, 1935)

Comes now the defendant and amends its Answer to Interrogatories heretofore filed herein.

It is noted that in the Answer heretofore filed, part 1-(a), reference to Claims 6 and 11 were omitted.

Defendant therefore amends its Answer to said Interrogatories by adding thereto—

**CLAIM 6**

Plaintiff relies upon the same patents relied upon to anticipate Claim 1.

**CLAIM 11**

Plaintiff relies upon the same patents to anticipate that are relied upon as against Claim 1, except Dyott.

Standard Parts, Inc.,

By Bair, Freeman & Sinclair,

Holloway, Peppers & Romanoff,

Its Attorneys

W. P. Bair,

Of Counsel.

Service of the above Further Answer to Plaintiff's Interrogatories, and receipt of copy thereof, acknowledged this 9th day of April, 1935.

Owen & Owen,  
Attorneys for Plaintiff.



*Memorandum Opinion.*

IN THE  
DISTRICT COURT OF THE UNITED STATES  
FOR THE NORTHERN DISTRICT OF OHIO,  
WESTERN DIVISION.

Equity No. 1408.

THE TOLEDO PRESSED STEEL COMPANY,

*Plaintiff,*

vs.

STANDARD PARTS, INC.,

*Defendant.*

Equity No. 1412.

THE TOLEDO PRESSED STEEL COMPANY,

*Plaintiff,*

vs.

HUBNER SUPPLY COMPANY,

*Defendant.***MEMORANDUM OPINION**

(Filed June 3, 1935)

HARRIS, J.:

This is an action for the alleged infringement of Patent No. 1,732,708, issued to Withrow and Close on October 22, 1929. The defendants are sellers of the products of manufacturers. Case No. 1408 involves the Bolser Flares manufactured by the Bolser Corporation, Des Moines, Iowa, and the suit is being defended by that company. See Exhibit 3-B. Case No. 1412 involves the K&K Truck Flares, manufactured by the Kari-Keene Manufacturing Company, formerly Meyers-Wilson Manufacturing Company, Sioux City, Iowa, and the suit is being defended by that company. See Exhibit 3-C. The defense is lack of novelty and invention, and infringement is denied.

The patent covers a torch burner or flare of the type usually used as a warning signal upon repair work.<sup>(1)</sup> Latterly, as required by the laws of several of the states, this type of warning signal is also used upon trucks parked upon the highway.

(1) See: McCloskey v. Toledo Pressed Steel Co., (C. C. A. 6) 27 (2d) 12, 13.

*Memorandum Opinion.*

Formerly red lanterns were used almost exclusively as such warning signals. These proved unsatisfactory because red lanterns resembled to some extent the red tail lights of automobiles, and they were often stolen. The flares first used were of the open type resembling Exhibits 28 and 29. While this type was more satisfactory than the use of lanterns, many complaints were made against the open flame flares because they would not withstand winds and rains. The patentees, who are very familiar with this art, experimented over a wide period of time and tested out many devices. From memory they have made drawings representing the various experimental types which led up to the patent in suit. These drawings are Exhibits 10-A to 10-J. They are arranged in chronological order.

When plaintiff's device came upon the market, McCloskey, who appears to have been a pioneer manufacturer of open flame torches, adopted a closed flame type of torch. The oldest and largest manufacturer of red lanterns, Dietz & Company, brought out an open flame torch about the time that plaintiff's torch was placed on the market. Thereafter Dietz brought out a protected flame torch with an open top and later a hooded torch with closed top and sides except for air inlet and flame outlet openings. The manufacturers of the alleged infringing torches came upon the market several years after the issuance of the patent in suit, and immediately reduced materially the volume of plaintiff's business. Three manufacturers of torches have recognized the validity of plaintiff's patent by taking licenses thereunder.

The plaintiff's devices have overcome the objections urged to the open flame torches, have met the tests suggested by the highway departments of the states which require the use of warning signals, and these torches have further materially effected economies by reducing the fuel costs about one-half and by greatly reducing the wick consumption. The inventive step involved is readily observable by contrasting Exhibits 28 and 29, which represent plaintiff's former commercial devices, and Plaintiff's Exhibit 3-A, which represents devices manufactured in accordance with the patent in suit.

*Memorandum Opinion.*

While the change means a simple one, <sup>(2)</sup> it was far from obvious. Although plaintiff's products have been on the market for over five years, no other further improvement has been made in the device. The changes that have been made have perhaps been made merely for the purpose of escaping infringement.

In my opinion the improvement of the patent in suit responds in many ways to the tests of invention. The art called for the improvement; it was met by plaintiff's device. *United Shoe etc. Corp. v. E. H. Feere Co.*, 64 F. (2d) 101, 102, 103. As we have seen, the plaintiff's device has met the test suggested by the various highway departments and the public generally has acquiesced in the use of plaintiff's device. *National v. Richardson*, (C. C. A. 6) 53 F. (2d) 282, 292. *Naivette v. Bishinger*, (C. C. A. 6) 61 F. (2d) 433, 435, 436. *Eibel Co. v. Paper Co.*, 261 U. S. 45, 46. Present complaints are readily explainable upon the basis of a misuse of the present devices. As we have seen, three licenses have been taken under the patent. *Elliott & Co. v. Youngstown Car Mfg. Co.*, (C. C. A. 3) 188 Fed. 345 (4). 48 C. J. 95, note 88. There has been persistent imitation, if not infringement, of plaintiff's device. *Linville v. Milberger*, 29 F. (2d) 610 (5). 48 C. J. 96, S. 96. The fact that there has been no improvement in the period of about five years since the patent issued and that plaintiff's device displaced practically all others is weighty evidence that the patentees of the patent in suit took an inventive step. *Compting v. Automatic*, 240 U. S. 609, 616. Plaintiff's device seems to have afforded the ultimate solution of the problem involved. *Warren v. Kholes*, 163 Fed. 263, 280 (C. C. A. 1).

From a consideration of all the evidence, I think plaintiff's contribution to the art represents more than mere mechanical skill and has the merit of invention. If there were doubt upon this subject, I feel that the commercial success of plaintiff's device would turn the scale in favor of invention. *Goodbody v. Firestone*, (C. C. A. 6) 23 F. (2d) 625 (4).

In urging validity and the limiting of the claims, defendants argue that their best reference is Almond No. 193,796. This patent is for a "Vapor Burner for Heat-

(2) *Star v. General*, 111 Fed. 398, 400 (C. C. A. 6); *Potts v. Creager*, 156 U. S. 597, 608; *Loom Co. v. Higgins*, 105 U. S. 591; *H. G. White Co. v. Norton N. Converse & Sons Co.*, 20 F. (2d) 311, 313.



*Memorandum Opinion.*

ing Purposes." It was not even intended that it should be used for illuminating purposes. For its intended purpose it would produce a blue flame and not a luminescent flame which is necessary for lighting purposes. The testimony shows that Almond's structure would not burn even in a moderate wind. The specifications, it seemed to me, would afford no suggestion of Withrow and Close's device to a mechanic skilled in the art. The drawings of the patent are very involved and complicated, and in my opinion would not suggest plaintiff's device except through the medium of hindsight and through the eyes of the patentees in suit. <sup>(3)</sup>

Defendants' expert testified that Martine No. 35,349 is equally pertinent with Almond as a reference from the standpoint of patentability. Martine's problem was to prevent smoking in a laboratory lamp. His contribution was the attaching to the lamp of a tube of sheet metal or other suitable material of somewhat greater diameter than the wick tube or the orifice of the laboratory lamp. It has less merit as an anticipation than has Almond. Other references relied on are Wenzel No. 577,090, Blake No. 453,335, Kahn No. 1,755,527, Heston No. 270,587 and Hathaway No. 147,496. Wenzel's patent covered a safety lamp also used as a night lamp. For use for the latter purpose the light was covered or protected by a glass shield with an open top. Blake is for a hydrocarbon illuminating burner "adapted for use with the lighter and more volatile oils—such as naphtha or gasoline—which vaporize at moderate heat." (p. 1, lines 24-26)

Plaintiff's expert would combine Wenzel, Exhibit D, with Blake or Kahn or Heston, to anticipate the device of the patent in suit. Hathaway is for the improvement of a burner as such. Hathaway's burner could not be used as a light, much less as an exposed warning signal. I do not further discuss these various references. I do not think that alone or in combination with other references they anticipate the device of the patent in suit. The evidence shows that the patentees Withrow and Close experimented with many devices which appear

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(3) "The eye that sees a thing already embodied in mechanical form gives little credit to the eye that first saw it in imagination. But the difference is just the difference between what is common observation and what constitutes an act of creation. The one is the eye of inventive genius; the other of a looker on after the fact." *Faries Mfg. Co. v. George W. Brown & Co.*, (C. C. A. 121 F. 547, 550.

*Memorandum Opinion.*

in Exhibits 10-A to 10-J, inclusive. From their testimony, I find it to be the fact that the devices described in these exhibits were unsatisfactory and did not solve the problem which is solved by the patent in suit. These facts being established, I readily reach the conclusion that the devices of the cited references would likewise fail in solving that problem or to suggest its solution to the mechanic skilled in the art.

Viewing them in the light of the applicable law, this must be true. Some of the authorities are as follows:

Skelly Oil Co. v. Universal Oil Products Co., (C. C. A. 3) 31 F. (2d) 427, 431:

"A patent relied upon as an anticipation must itself speak. Its specification must give in substance the same knowledge and the same directions as the specification of the patent in suit. *Otto v. Linford*, 46 L. T. (N. S.) 35, 44. It is not enough to prove that a method or apparatus described in an earlier specification can be made to produce this or that result. *Flour Oxidizing Co. v. Carr & Co.*, 35 R. F. C. 457. A singularly sensible test of the rule of anticipation is given in *British Thomson-Houston Co. v. Metropolitan Vickers Electrical Co.*, 45 R. P. C. 22, by asking the question—"Would a man who was grappling with the problem solved by the patent attacked, and having no knowledge of that patent, if he had had the alleged anticipation in his hands, have said: 'That gives me what I wish!'" *The Pope Alliance Corporation v. The Spanish River Pulp & Paper Mills, Ltd.* (Privy Council Appeals No. 33 of 1928:)"

*Fulton Co. v. Bishop & Babcock Co.*, 17 F. (2d) 999, 1002; (*Westenhaver, J.*):

"This art, and all that can be claimed for it, is not adequate to show anticipation or to deprive Fulton's means, considered merely as a mechanism, of the quality of invention. This results from settled rules for appraising the prior art, established by numerous decisions. Prior patents are part of the prior art only by what they disclose on their face. Prior accidental production of the same thing, where the character and function are not recognized until the later patent, does not effect anticipation. Anticipation is not disclosed by

*Memorandum Opinion.*

drawings which only show a similar arrangement of parts, where such arrangement is not essential to the first invention and was not adopted and used to perform the function which it performs in the second invention, especially when the first patent contains no suggestion of the way in which the result sought is accomplished by the second inventor, *Fulton Co. v. Bishop & Babcock Co.* (C. C. A. 6) 284 F. 774, 777, and cases cited."

*Gordon Form Lathe Co. v. Walcott Mach. Co.*, (C. C. A. 6) 32 F. (2d) 55, 58:

"In none of the patents cited is any effort shown to devise, or disclosure made of, means for oscillating the tool, in synchronism with its reciprocatory movements and the revolution of the work, by the use of an appropriately shaped cam, movable frame and bell crank lever tool support. None contemplates the turning of irregular or non-geometric forms. Those patents cannot be considered as anticipations which do not disclose the purpose, means, and mechanisms for accomplishing the end of the patent in suit, and which are restricted, by the mechanisms disclosed, to the accomplishment only of a substantially different and limited purpose. *Eibel Process Co. v. Minnesota & Ontario Paper Co.*, 261 U. S. 45, 66, 43 S. Ct. 322 (67 L. Ed. 523); *Canada et al vs. Michigan M. Iron Co.*, 124 F. 486, 493 (C. C. A. 6); *Munsing Paper Co. v. American Sulphite Pulp Co.*, 228 F. 700, 703 (C. C. A. 6); *Hobbs et al v. Beach*, 180 U. S. 383, 392, 21 S. Ct. 409 (45 L. Ed. 586); *Fulton Co. v. Bishop & Babcock Co.*, 284 F. 774, 777 (C. C. A. 6); *Outlook Envelope Co. v. General Paper Goods Mfg. Co.*, 239 F. 877 (C. C. A. 2). It is true that the mechanism of the Brophy patent can be so reorganized as to cut a cam or other nongeometric figure, but this is done only by substituting for the eccentrics of Brophy the more or less arbitrarily shaped and specially designed separate control cams of the patent in suit. Such reorganization constitutes incorporating into the machine of Brophy the essence of the Gordon invention to accomplish the Gordon result. Such an organiza-



*Memorandum Opinion.*

tion was neither conceived nor disclosed by Brophy, and the possibility of reorganization, so as to reveal in the machine of Brophy the actual disclosures of Gordon, will not convert the patent to Brophy into an anticipation. \* \* \* As stated by the District Judge, the reorganization itself 'indicated inventive thought.'"

Frey et al. v. Marvel Auto Supply Co., 236 Fed. 918 (C. C. A. 6):

"Prior patents are part of the prior art only by what they disclose on their face. Naylor v. Alsop Process Co., (C. C. A. 8) 168 Fed. 911, 920, 94 C. C. A. 315; Munsing Paper Co. v. American etc. Co., (C. C. A. 6) 228 Fed. 700, 703, 143 C. C. A. 222. We are satisfied that Swain's air inlets do not have the effect of Frey's non-return valve referred to."

Buckeye Incubator Co. v. Blum, 17 F. (2d) 456, 457: (Westenhaver, J.):

"As to mechanical patents, the law is settled that prior patents are not a part of the prior art, except as to what is disclosed on their face, and that they cannot be reconstructed in the light of the invention in suit, and then used as an anticipation or to repel novelty. This is particularly true, if the prior patents contain no suggestion that they were designed by the maker for the performance of the functions of the patented device, and were in fact never adapted or actually used for that purpose. See Topliff v. Topliff, 145 U. S. 156, 161, 12 S. Ct. 825, 36 L. Ed. 658; Frey v. Marvel Auto Supply Co. (C. C. A. 6) 236 F. 916, 918; Stoad Lens Co. v. Kryptok (C. C. A. 8) 214 F. 369, 375."

W. Bingham Co. v. Ware, 46 F. (2d) 33 (C. C. A. 6):

"It is said by counsel for appellant that it was a simple matter to take Brown or some other of the metal rollers, remove the steel tread and reform the side plates for the mounting of a rubber tire, and thus produce Ware. Examining the prior patents in connection with the Ware structure, since it has now been devised, that would seem true, but patentability is not defeated by feasibil-

*Memorandum Opinion.*

ity of effecting the same result by the changing of existing structures. *Topliff v. Topliff*, 145 U. S. 156, 12 S. Ct. 825, 36 L. Ed. 658; and *Nelson Mfg. Co. v. Myers & Bro.*, 25 F. (2d) 659 (C. C. A. 6)."

Farther, in view of the express limitations contained in the introductory clauses of the claims of the patent in suit, there may be some doubt as to whether or not the cited references are in analogous arts. *Jackson Fence Co. v. Peerless Fence Co.*, (C. C. A. 6) 228 F. 691; *Lakewood v. Walker*, 23 F. (2d) 623. I think the defense of want of novelty and invention must fail.

If the patent in suit is valid, I think defendants' devices infringe all of the claims relied upon. Plaintiff's commercial device is represented by Exhibit 3-A and the drawing Exhibit 2-A. The Bolser torch is represented by Exhibit 3-B and the drawing Exhibit 2-B. The K-K torch is represented by Plaintiff's Exhibit 3-C and the drawing Exhibit 2-C. The main argument against infringement, as I gather it, is based upon the manner or method of disposing or mounting the cap upon the torch body. It is said the claims call for the mounting or disposing of the cap directly or immediately upon the torch body.

Defendants' expert testified that Withrow's contribution to the art is his teaching that the cap be mounted or disposed directly or immediately upon the torch body as appears in the exhibits just referred to. I cannot agree with this interpretation of the patent. I think that its main purpose and teaching is to protect the flame at its source and that this idea has been appropriated in defendants' devices. There is authority, too, for saying that where location is one element in a combination, a fair construction of the language of the claims is obtainable only from a study of the entire patent. *Deister Concentrator Co. v. Deister Machine Co.*, (C. C. A. 7) 263 Fed. 706, 709, 710. Such a study shows that the essence of the invention here is protection of the flame at the source, which is accomplished by defendants' devices also. In any event, Exhibit 3-B avoids the language of the claims only by almost imperceptible and immaterial differences. To hold non-infringement on this ground would be clearly to sacrifice substance to form. Plaintiff's Exhibit 3-C is said not to infringe because the cap is mounted not upon the torch body but upon an ex-

*Memorandum Opinion.*

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tion of the wick tube. It seems to me, however, it is at least as fair to say that the wick tube in Exhibit 3-B is a part or extension of the torch body, within the meaning of the claims, (although the so-called wick tube is made a separate part) and that the cap is disposed or mounted upon the torch body within the meaning of the claims fairly construed.

It is said that if defendant's devices come within the language of the claims, they read directly on Almond No. 193,796, and hence that as to this claim the alleged infringing torches are within the prior art. But if the claims read on Almond, they do so as a matter of phraseology only and not as a matter of substance, and defendants do not escape infringement upon the ground urged. The difference between plaintiff's device and the accused devices are arguable differences only; the substance of plaintiff's invention has been appropriated, and the devices infringe all of the claims relied upon.

An appropriate order may be entered in accordance with this memorandum opinion.

Geo. P. Hahn,  
District Judge.

Toledo, Ohio, June 3, 1935.



*Final Decree.*

IN THE UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF OHIO  
WESTERN DIVISION

In Equity No. 1408.

THE TOLEDO PRESSED STEEL COMPANY,

*Plaintiff,*

vs.

STANDARD PARTS, INC.,

*Defendant.*

**FINAL DECREE**

(Filed and Entered June 29, 1935)

This cause having come on for hearing on the pleadings and proofs and having been argued by counsel for the respective parties both orally and in briefs, and the Court being fully advised in the premises it is

Ordered, Adjudged and Decreed as follows:

1. That Letters Patent in suit No. 1,732,708, for a Burner, issued under date of October 22, 1929, to plaintiff, The Toledo Pressed Steel Company, as assignee of Joseph E. Withrow and Lyman W. Close, are good and valid in law.
2. That the plaintiff is the owner of said Letters Patent and of all rights thereunder and has been such at all times since the grant thereof.
3. That the defendant, Standard Parts, Inc., has infringed upon claims 2, 5, 11, 12 and 13 of said Letters Patent by the sale within the district since the issuance of said Letters Patent of devices manufactured by The Bolser Corporation, of Des Moines, Iowa, illustrated in Plaintiff's Exhibit 2-b and embodied in Plaintiff's Exhibit 3-b herein.
4. That said The Bolser Corporation openly appeared and assumed the defense of this cause and is the real party in interest herein.
5. That a permanent injunction issue out of and under the seal of this court enjoining and restraining the defendant, Standard Parts, Inc., its agents, attorneys, workmen, and employees and all others in privity with said defendant, from infringing upon said Letters patent, or upon any claim thereof, and from inducing others to make, use or sell devices infringing the claims of said

*Final Decree.*

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Letters Patent or any of them, without the license of the plaintiff, in any way whatsoever within the territory covered by said Letters Patent.

6. That the plaintiff is entitled to recover from said defendant, Standard Parts, Inc., the profits which it has made from its infringements and the damages which the plaintiff has sustained by reason thereof; but, it appearing that plaintiff has waived its claims for profits and damages against the defendant, Standard Parts, Inc., no order for accounting is made herein, reserving to plaintiff all rights to injunction and accounting against said The Bolser Corporation on account of its sales of said infringing devices to the defendant, Standard Parts, Inc., and/or on account of any and all other infringements of said Letters Patent committed by said The Bolser Corporation.

7. That service of the injunction herein upon defendant's solicitor, Wayne Peppers, Esq., for the defendant, Standard Parts, Inc. shall be as good service as if served personally upon said defendant, Standard Parts, Inc.

8. That plaintiff recover its costs from defendant, Standard Parts, Inc.

Geo. P. Hahn,  
United States District Judge.

Dated: .....

Assented to as to form:

Owen & Owen,

Solicitors for Plaintiff.

Bair, Freeman & Sinclair,

Holloway, Peppers & Romanoff,

Solicitors for Defendant.

IN THE UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF OHIO  
WESTERN DIVISION

In Equity No. 1412.

THE TOLEDO PRESSED STEEL COMPANY,

*Plaintiff,*

vs.

HUEBNER SUPPLY COMPANY,

*Defendant.*

**FINAL DECREE**

(Filed and Entered June 29, 1935)

This cause having come on for hearing on the pleadings and proofs and having been argued by counsel for the respective parties both orally and in briefs, and the Court being fully advised in the premises it is

Ordered, Adjudged and Decreed as follows:

1. That Letters Patent in suit No. 1,732,708, for a Burner, issued under date of October 22, 1929, to plaintiff, The Toledo Pressed Steel Company, as assignee of Joseph E. Withrow and Lyman W. Close, are good and valid in law.
2. That the plaintiff is the owner of said Letters Patent and of all rights thereunder and has been such at all times since the grant thereof.
3. That the defendant, Huebner Supply Company, has infringed upon claims 1, 2, 5, 6, 7, 11, 12 and 13 of said Letters Patent by the sale within this district since the issuance of said Letters Patent of devices manufactured by Kari-Keen Manufacturing Company, formerly Myers-Wilson Manufacturing Company, of Sioux City, Iowa, illustrated in Plaintiff's Exhibit 2-c and embodied in Plaintiff's Exhibit 3-c herein.
4. That said Kari-Keen Manufacturing Company openly appeared and assumed the defense of this cause and is the real party in interest herein.
5. That a permanent injunction issue out of and under the seal of this court enjoining and restraining the defendant, Huebner Supply Company, its agents, attorneys, workmen, and employees and all others in privity with said defendant, from infringing upon said Letters Patent, or upon any claim thereof, and from inducing others to make, use or sell devices infringing the



*Final Decree.*

claim of said Letters Patent or any of them, without the license of the plaintiff, in any way whatsoever within the territory covered by said Letters Patent.

6. That the plaintiff is entitled to recover from said defendant, Huebner Supply Company, the profits which it has made from its infringements and the damages which the plaintiff has sustained by reason thereof; but, it appearing that plaintiff has waived its claims for profits and damages against the defendant, Huebner Supply Company, no order for accounting is made herein, reserving to plaintiff all rights to injunction and accounting against said Kari-Keen Manufacturing Company and its predecessor Myers-Wilson Manufacturing Company, on account of its or their sales of said infringing devices to the defendant, Huebner Supply Company, and/or on account of any and all other infringements of said Letters Patent committed by said Kari-Keen Manufacturing Company and/or Myers-Wilson Manufacturing Company.

7. That service of the injunction herein upon defendant's solicitor, Wayne Peppers, Esq., for the defendant, Huebner Supply Company, shall be as good service as if served personally upon said defendant, Huebner Supply Company.

8. That plaintiff recover its costs from defendant, Huebner Supply Company.

Geo. P. Hahn,  
United States District Judge.

Dated:.....

Assented to as to form:

Owen & Owen,

Solicitors for Plaintiff.

Bair, Freeman & Sinclair,

Holloway, Peppers & Romanoff,

Solicitors for Defendant.

*Stipulation.*

IN THE UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF OHIO,  
WESTERN DIVISION

Equity No. 1408.

THE TOLEDO PRESSED STEEL COMPANY,

*Plaintiff,*

vs.

STANDARD PARTS, INC.,

*Defendant.*

Equity No. 1412.

THE TOLEDO PRESSED STEEL COMPANY,

*Plaintiff,*

vs.

HUEBNER SUPPLY COMPANY,

*Defendant.*

**STIPULATION**

(Filed August 12, 1935)

It Is Hereby Stipulated between the parties that the above causes may be tried together on appeal and upon a single record.

Toledo, Ohio, August 3, 1935.

The Toledo Pressed Steel Company,  
*Plaintiff.*

By Owen & Owen,  
Its Attorneys

Standard Parts, Inc.,  
and

Huebner Supply Company,  
*Defendants*

By Bair, Freeman & Sinclair  
and

Holloway, Peppers & Romanoff,  
Their Attorneys.

Toledo, Ohio, August 3, 1935.

It is so ordered

Geo. P. Hahn,

U. S. District Judge.

*Petition for Appeal.***PETITION FOR APPEAL**

(Filed September 26, 1935)

Equity No. 1408

To the Hon. George P. Hahn, District Court Judge

The above-named defendants feeling themselves aggrieved by the Decree made and entered in this cause on ~~the~~ 29th day of June, 1935, do hereby appeal from said Decrees to the Circuit Court of Appeals for the Sixth Circuit for the reasons specified in the Assignment of Errors, which is filed herewith, and they pray that their application be allowed and that Citations issue as provided by law, and that a transcript of the record upon which said Decrees were made, duly authenticated, may be sent to the United States Circuit Court of Appeals for the Sixth Circuit under the statutes and rules of said Court as may be provided.

And your Petitioners further pray that proper Orders be made touching the security to be required of them to perfect their Appeals.

It is noted that the parties stipulated in open Court that the two cases above identified should be tried together and a single record made.

Standard Parts, Inc.,  
Defendant

and

Huebner Supply Company,  
Defendant

By Bair, Freeman & Sinclair,  
and Holloway, Peppers & Romanoff,  
Their Attorneys.

W. P. Bair,  
Of Counsel.  
July 22, 1935.



*Petition for Appeal.***PETITION FOR APPEAL**

(Filed September 26, 1935)

Equity No. 1412.

To the Hon. George P. Hahn, District Court Judge:

The above-named defendants feeling themselves aggrieved by the Decrees made and entered in this cause on the 29th day of June, 1935, do hereby appeal from said Decrees to the Circuit Court of Appeals for the Sixth Circuit for the reasons specified in the Assignment of Errors, which is filed herewith, and they pray that their application be allowed and that Citations issue as provided by law, and that a transcript of the record upon which said Decrees were made, duly authenticated, may be sent to the United States Circuit Court of Appeals for the Sixth Circuit under the statutes and rules of said Court as may be provided.

And your Petitioners further pray that proper Orders be made touching the security to be required of them to perfect their Appeals.

It is noted that the parties stipulated in open Court that the two cases above identified should be tried together and a single record made.

Standard Parts, Inc.,

Defendant

and

Huebner Supply Company,

Defendant

By Bair, Freeman & Sinclair,  
and Holloway, Peppers & Romanoff,  
Their Attorneys.

W. P. Bair,  
Of Counsel.  
July 22, 1935.

*Assignment of Errors.***ASSIGNMENT OF ERRORS**

(Filed September 26, 1935)

Equity No. 1408.

Come now the defendants, Standard Parts, Inc. and Huebner Supply Company, and assign the following as the errors upon which they will rely in the prosecution of their Appeals; each defendant assigning as errors in its cause, that:

1. The Court erred in finding that the Withrow and Close patent, No. 1,732,708, is valid at law.
2. The Court erred in that it did not enter a Decree finding said patent invalid as to each of the claims thereof involved in the suit.
3. The Court erred in finding that said patent was infringed by the defendant.
4. The Court erred in that it did not enter a decree finding said patent not infringed by the defendant.
5. The Court erred in entering a decree for an injunction.
6. The Court erred in that it did not dismiss the Bill of Complaint at plaintiff's cost.

Standard Parts, Inc.,

Defendant

and

Huebner Supply Company,

Defendant

By Holloway, Peppers &amp; Romanoff,

and by Bair, Freeman &amp; Sinclair,

Their Attorneys.

W. P. Bair,

Of Counsel.

Des Moines, Iowa.

*Assignment of Errors.***ASSIGNMENT OF ERRORS**

(Filed September 26, 1935)

Equity No. 1412.

Come now the defendants, Standard Parts, Inc. and Huebner Supply Company, and assign the following as the errors upon which they will rely in the prosecution of their Appeals; each defendant assigning as errors in its cause, that;

1. The Court erred in finding that the Withrow and Close patent, No. 1,732,708, is valid at law.

2. The Court erred in that it did not enter a Decree finding said patent invalid as to each of the Claims thereof involved in the suit.

3. The Court erred in finding that said patent was infringed by the defendant.

4. The Court erred in that it did not enter a decree finding said patent not infringed by the defendant.

5. The Court erred in entering a decree for an injunction.

6. The Court erred in that it did not dismiss the Bill of Complaint at plaintiff's cost.

Standard Parts, Inc.,  
Defendant

and

Huebner Supply Company,  
Defendant

By Holloway, Peppers & Romanoff,  
and by Bair, Freeman & Sinclair,  
Their Attorneys.

W. P. Bair,  
Of Counsel.  
Des Moines, Iowa.



*Order Allowing Appeal.*

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**ORDER ALLOWING APPEALS**

(Entered September 26, 1935)

Equity No. 1408.

Now on this 26th day of September, 1935, this matter coming before the Court on the Petition of the defendants in Equity No. 1408 and Equity No. 1412 for allowance of Appeals to the United States Circuit Court of Appeals for the Sixth Circuit, and the Court being advised, finds as follows, to-wit:

That said Appeals should be allowed.

It Is Therefore Ordered that the Appeals of the defendants, Standard Parts, Inc. and Huebner Supply Company, to the United States Circuit Court of Appeals for the Sixth Circuit are allowed, and a cost bond in each case is set at \$250.00 Dollars.

And the parties having stipulated that the causes shall be tried together and a single record made up.

It Is Further Ordered that a transcript of the records, proceedings and papers upon which the Final Decrees were made be duly authenticated and sent to the United States Circuit Court of Appeals for the Sixth Circuit.

Done at Toledo, Ohio, on the above date, to-wit, the 26th day of September, 1935.

Geo. P. Hahn,  
United States District Judge.

*Order Allowing Appeal.*

---

**ORDER ALLOWING APPEALS**

(Entered September 26, 1935)

Equity No. 1412.

Now on this 26th day of September, 1935, this matter coming before the Court on the Petition of the defendants in Equity No. 1408 and Equity No. 1412 for allowance of Appeals to the United States Circuit Court of Appeals for the Sixth Circuit, and the Court being advised, finds as follows, to-wit:

That said Appeals should be allowed.

It Is Therefore Ordered that the Appeals of the defendants, Standard Parts, Inc. and Huebner Supply Company, to the United States Circuit Court of Appeals for the Sixth Circuit are allowed, and a cost bond in each case is set at \$250.00 Dollars.

And the parties having stipulated that the causes shall be tried together and a single record made up.

It Is Further Ordered that a transcript of the records, proceedings and papers upon which the Final Decrees were made be duly authenticated and sent to the United States Circuit Court of Appeals for the Sixth Circuit.

Done at Toledo, Ohio, on the above date, to-wit, the 26th day of September, 1935.

Geo. P. Hahn,  
United States District Judge.

*Bond on Writ of Error or Appeal.*

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**BOND ON WRIT OF ERROR OR APPEAL**

(Filed September 27, 1935)

No. 1408 In Equity.

Know All Men By These Presents, That we Standard Parts, Inc., and The Bolser Corporation as principal, and The United States Fidelity & Guaranty Company as surety, are held and firmly bound unto The Toledo Pressed Steel Company in the full and just sum of Two Hundred and Fifty Dollars (\$250.00) to be paid to the said The Toledo Pressed Steel Company certain attorneys, executors, administrators, successors or assigns; to which payment well and truly to be made, we bind ourselves, our heirs, executors and administrators, jointly and severally, by these presents. Sealed with our seals and dated this 27th day of September in the year of our Lord one thousand nine hundred and thirty-five.

Whereas, lately at a session of the District Court of the United States for the Western Division of the Northern District of Ohio in a suit pending in said Court, between The Toledo Pressed Steel Company, as plaintiff, and Standard Parts, Inc. as defendant, Equity No. 1408, a Decree was rendered against the said Standard Parts, Inc. and the said Standard Parts, Inc. having obtained an Appeal and filed a copy thereof in the Clerk's office of the said Court to reverse the Decree in the aforesaid suit, and a Citation directed to the The Toledo Pressed Steel Company citing and admonishing it to be and appear at a session of the United States Circuit Court of Appeals for the Sixth Circuit, to be holden at the city of Cincinnati, in said circuit, on the 27th day of October, next.

Now the condition of the above obligation is such, that if the said Standard Parts, Inc. shall prosecute its Appeal to effect, and answer all damages and costs if it



*Bond on Writ of Error or Appeal.*

fail to make its plea good, then the above obligation to be void; else to remain in full force and virtue.

Sealed and delivered in presence of  
 (signed) W. P. Bair  
 (signed) W. R. Peppers  
 Standard Parts, Inc.,  
 By  
 (sgd.) George R. Austin,  
 President (Seal)  
 The Bolser Corporation  
 By (sgd.) C. M. Bolser,  
 President (Seal)  
 United States Fidelity and  
 Guaranty Company  
 By (sgd.) Louis H. Paine,  
 Its Attorney in Fact. (Seal)

Approved by  
 (signed) Geo. P. Hahn,  
 United States District Judge.

**BOND ON WRIT OF ERROR OR APPEAL**

(Filed September 27, 1935)

No. 1412 In Equity.

Know All Men By These Presents, That we Huebner Supply Company and Kari-Keen Manufacturing Company as principal, and The United States Fidelity & Guaranty Company as surety, are held and firmly bound unto The Toledo Pressed Steel Company in the full and just sum of Two Hundred and Fifty Dollars (\$250.00) to be paid to the said The Toledo Pressed Steel Company certain attorneys, executors, administrators, successors or assigns; to which payment well and truly to be made, we bind ourselves, our heirs, executors and administrators, jointly and severally, by these presents.

*Bond on Writ of Error or Appeal.*

Sealed with our seals and dated this 27th day of September, in the year of our Lord one thousand nine hundred and thirty-five.

Whereas, lately at a session of the District Court of the United States for the Western Division of the Northern District of Ohio in a suit pending in said Court, between The Toledo Pressed Steel Company, as plaintiff, and Huebner Supply Company as defendant, Equity No. 1412 a Decree was rendered against the said Huebner Supply Company and the said Huebner Supply Company having obtained an Appeal and filed a copy thereof in the Clerk's office of the said Court to reverse the Decree in the aforesaid suit, and a Citation directed to the The Toledo Pressed Steel Company citing and admonishing it to be and appear at a session of the United States Circuit Court of Appeals for the Sixth Circuit, to be holden at the city of Cincinnati, in said circuit, on the 27th day of October, next.

Now the condition of the above obligation is such, That if the said Huebner Supply Company shall prosecute its Appeal to effect, and answer all damages and costs if it fail to make its plea good, then the above obligation to be void; else to remain in full force and virtue.

Sealed and delivered in presence of.

(signed) Margaret Howard      The Huebner Supply  
(signed) W. R. Peppers      Company,

By (signed) Rudolph Huebner,  
Sec'y-Treas.      (Seal)

Kari-Keen Manufacturing Co.

By (signed) C. H. Myers,  
Vice President      (Seal)

United States Fidelity and  
Guaranty Company

By (signed) Louis H. Paine,  
Its Attorney in Fact.      (Seal)

Approved by  
Geo. P. Hahn,  
United States District Judge.

*Citation.*

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**CITATION**

(Filed September 28, 1935)

Equity No. 1408.

To The Toledo Pressed Steel Company, Plaintiff,  
and to Owen & Owen, Its Attorneys:

You and each of you are hereby cited and admonished to be and appear at the Circuit Court of Appeals of the United States for the Sixth Circuit to be held in the City of Cincinnati, in the State of Ohio, Thirty (30) days from and after the day this Citation bears date, pursuant to an Order allowing Appeals filed and entered in the Clerk's Office of the District Court of the United States for the Northern District of Ohio, Western Division, on this date, from Final Decrees, signed, filed and entered on the 29th day of June, 1935, in those certain suits, being Equity No. 1408 and Equity No. 1412, in which respectively you are plaintiff, and in which respectively, Standard Parts, Inc. and Huebner Supply Company, are defendants and appellants, to show cause, if any there be why the Decrees rendered against the said appellants as mentioned in said Order allowing the Appeals should not be corrected and reversed, and why justice should not be done the parties in that behalf.

Witness, the Honorable George P. Hahn, United States District Judge for the Northern District of Ohio, Western Division, this 27th day of September, 1935, and the independence of the United States, the 160th.

Geo. P. Hahn,

U. S. District Judge.

Service of the foregoing Citation and of the Petition for Appeal and Assignment of Errors, and receipt of copies of said Citation, Petition and Assignment of Errors hereby acknowledged this 27th day of September, 1935.

Owen & Owen,  
Attorneys for Plaintiff-Appellee.



**CITATION**

(Filed September 28, 1935)

Equity No. 1412.

To The Toledo Pressed Steel Company, Plaintiff  
and to Owen & Owen, Its Attorneys:

You and each of you are hereby cited and admonished to be and appear at the Circuit Court of Appeals of the United States for the Sixth Circuit to be held in the City of Cincinnati, in the State of Ohio, Thirty (30) days from and after the day this Citation bears date, pursuant to an Order allowing Appeals filed and entered in the Clerk's Office of the District Court of the United States for the Northern District of Ohio, Western Division, on this date, from Final Decree, signed, filed and entered on the 29th day of June, 1935, in those certain suits, being Equity No. 1408 and Equity No. 1412, in which respectively you are plaintiff, and in which respectively, Standard Parts, Inc. and Huebner Supply Company, are defendants and appellants, to show cause, if any there be why the Decrees rendered against the said appellants as mentioned in said Order allowing the Appeals should not be corrected and reversed, and why justice should not be done the parties in that behalf.

Witness, the Honorable George P. Hahn, United States District Judge for the Northern District of Ohio, Western Division, this 27th day of September, 1935, and the independence of the United States, the 160th.

Geo. P. Hahn,

U. S. District Judge.

Service of the foregoing Citation and of the Petition for Appeal and Assignment of Errors, and receipt of copies of said Citation, Petition and Assignment of Errors hereby acknowledged this 27th day of September, 1935.

Owen & Owen,  
Attorneys for Plaintiff-Appellee.

*Narrative Condensation of Testimony and of  
Stipulations.*

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**NARRATIVE CONDENSATION OF TESTIMONY  
AND OF STIPULATIONS**

(Filed September 26, 1935)

(Equity No. 1408. Equity No. 1412)

**STIPULATION IN OPEN COURT**

Mr. Owen:

It is stipulated that these two causes will be tried together and a single record made up.

Mr. Freeman:

The record may show that Case No. 1412 is being defended by the Kari-Keen Manufacturing Company of Sioux City, Iowa, and that the Case No. 1408 is being defended by the Bolser Corporation of Des Moines, Iowa.

Mr. Owen:

It is stipulated that the plaintiff is a corporation as alleged in the bills of complaint; and that the plaintiff is the present owner of the patent in suit and has been since its issuance.

It is further stipulated that either party may introduce what we call soft copies, uncertified copies of United States Letters Patents, which may be corrected if error is shown; and that a soft copy of the file wrapper of the patent in suit may be introduced.

Mr. Owen:

In connection with the Bolser torch; that is Case 1408, the plaintiff charges infringement of Claims 2, 5, 11, 12 and 13.

As to the Kari-Keen (Case 1412), the same claims, and in addition claims 1, 6 and 7.

Mr. Owen:

It is stipulated that the defendants have sold within this District, prior to the filing of the bills of complaint and subsequent to the issuance of the patent in suit, torches in the Bolser case (Equity No. 1408) like Exhibit No. 3-b, and in the other case (Equity No. 1412) like Exhibit 3-c.

*Narrative Condensation of Testimony and of  
Stipulations.*

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**EXHIBITS OFFERED**

Plaintiff's Paper Exhibits

1. Withrow and Close patent in suit—No. 1,732,708.
- 2-a. Drawing—Figure 3 of patent in suit—with terms of Claims 2 and 11 applied.
- 2-b. Drawing of defendant's torch in Equity 1408 (Bolser) with Claims 2 and 11 applied.
- 2-c. Drawing of defendant's torch in Equity 1412 (Kari-Keen) with Claims 2 and 11 applied.
4. Circular of plaintiff's first open flame torch.
5. Package of letters of complaint in regard to the open wick torch originally manufactured by plaintiff.
6. Yellow tag sent out by plaintiff with old torches recommending 1½ inch wick exposure.
7. Sketch showing experimental burner with long tube extending into fuel tank.
8. Part of circular showing open flame torch on which plaintiff went into production in 1928. Actual device is shown in physical Exhibit 29.
9. Package of complaint letters about plaintiff's torch, Exhibit 8, open flame type.
- 10-a
- 10-b
- 10-c
- 10-d
- 10-e Drawings of experimental torches tried
- 10-f by Plaintiff.
- 10-g
- 10-h
- 10-i
- 10-j
- 11-a. Circular of plaintiff's construction torch embodying patented burner in suit.
- 11-b. Plaintiff's direction sheet for burner in suit.
- 11-c. Plaintiff's truck flare circular.
12. Letters of commendation from plaintiff's customers referring to device in suit.
13. Plaintiff's orders for torches of type in suit from Iowa.
14. Plaintiff's orders for torches of type in suit from other territory.
15. Circular showing letter from Michigan State Highway Commissioner.



*Narrative Condensation of Testimony and of Stipulations.*

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16. Anthes license dated August 15, 1933.
17. Test records of oil consumption by open flame burner and plaintiff's and defendant's enclosed flame burners.
18. Test records of plaintiff's enclosed flame burner and open flame burner as to wick consumption.
- 19-a. Bolser circular.
- 19-b. Bolser circular letter.
- 19-c. Letter from Bolser customer enclosed with circular.
20. Kari-Keen circular.
21. Dietz lantern catalog.
22. Dietz first open flame burner circular.
23. Dietz circular showing hooded burner.
24. Dietz latest circular.
25. Circular of McCloskey open flame torch made for him in 1925.
26. Circular of McCloskey torch brought out in 1929.
27. Letter from Iowa Highway Commission.
28. Circular concerning plaintiff's open flame torch.
31. Billingham patent, No. 181,030—catalog sheet.

**Plaintiff's Physical Exhibits**

- 1-a. Plaintiff's commercial torch made under patent in suit.
- 3-b. Bolser Torch — Equity 1408 — (Corresponds to drawing, Exhibit 2-b).
- 3-c. Kari-Keen torch, Equity 1412 — (Corresponds to drawing, Exhibit 2-c).
28. First Toledo open flame torch made November, 1926.
29. Second Toledo open flame torch made in July, 1928, corresponds to Exhibit 8.
32. Model of Billingham patent, No. 181,030.

**Defendant's Exhibits**

- A. Toledo Pressed Steel Company circular.
- B. Old Railroad Flare.
- C. Plaintiff's present commercial flare—half cut away.
- D. Model—Wenzel patent, No. 577,090.
- E. Model—Wenzel patent, No. 577,090, provided with imperforate top.
- F. Folding section drawing of Almond Patent No. 193,796, Figure 1.
- F-1 Almond drawing with letters of its patent

- H. Defendant's burner with removable skirt—(Bolser) — Defendant's flare with removable skirt—(Kari-Keen).
- I. Defendant's burner with skirt—(Bolser).
- J. Defendant's flare with skirt—(Bolser).
- K. Drawing—defendant's flare complained of—Equity 1408 (Bolser).
- L. Drawing—defendant's flare complained of—Equity 1412 (Kari-Keen).
- M. Bolser circular.
- N. Book of patents.
- O. Whole circular of plaintiff's Exhibit 8.

## TESTIMONY OF WITNESSES

### JOSEPH E. WITHROW

I am Joseph E. Withrow, President of the Toledo Pressed Steel Company, the plaintiff. I have been connected with the plaintiff since 1926.

When I first became connected with it, it was manufacturing torches as warning signals. Exhibit 4 is a circular showing the type of torch being made and sold at that time. Our company continued the manufacture and sale of the torch illustrated in Exhibit 4 until July, 1928. We sold them quite extensively as a warning signal for obstructions on highways.

To my knowledge, that particular type of torch was not sold as a warning signal for parked trucks and busses. I know of no warning signal used at that time for parked trucks and busses. They used lanterns.

Our torch of this Exhibit 4 type was then sold to contractors for use in connection with construction work. That torch did not give satisfactory service in that use. The objections to it were that in severe weather, winds and rains, it would continually go out, and would fail as a warning signal. We received many complaints in that connection. I have some of them here selected from others. Some we took out of our files. We had many of them. They were complaints that came in from our customers. Exhibit 5 is a package of these complaint letters. (Witness reads from Exhibit 5)

This is from the Consolidated Equipment Company, Columbus, Ohio, June 6, 1927. At the beginning:

"With reference to the torches tried out by the City of Columbus, I beg to advise that the writer made a test of two of these torches Saturday.

At the beginning of the test, we were having a heavy fall of rain with a high wind and both torches went out. In fact it was impossible to keep them burning for any length of time.

I then took a brand new torch and a new wick out of our stock, and filled the torch with coal oil from a nearby local filling station, and to my great surprise this torch went out also."

This is from the Yancey Tractor Company, Albany, Georgia, June 15, 1927:

"We recently sold the City of Savannah some Toledo torches, and we are today in receipt of a letter from them in which they advise us that these torches are unsatisfactory inasmuch as the rain puts the light out. This being the case the City of Savannah desires to return these torches, and we would like to ask if it is true that a hard rain will extinguish these lights, as you know we have some very hard rains in this section, and unless the torches will burn during a hard rain we are afraid we will have other complaints."

This is from Hedge and Mattheis Company, Boston, Massachusetts, July 26, 1927:

"I was reading some of your information again which stated that your torches did not go out in a heavy shower and it occurs that recently three different owners have told me that practically all the torches were put out in some of the heavy showers that we have had recently.

"We have wondered if you have found any way to overcome this difficulty."

Another one headed Consolidated Equipment Company, Columbus, Ohio, October 14, 1927:

"We have twenty four of your Toledo torches and note that whenever it rains the torches go out."

The Victor L. Phillips Company, Kansas City, Missouri, February 9, 1928:

"We have a customer who is using some four or five dozen Toledo Torches in the extreme West-



ern portion of Kansas. These are used on three different jobs in different counties and the superintendents on the three jobs report that the wind blows these torches out."

Clarence H. Buell, Syracuse, New York, February 10, 1928:

"I put out a half a dozen Toledo Torches on a trial order and in checking them up I find that they are continually going out during the night."

The same: Clarence H. Buell, March 31, 1928:

"I have placed several trial orders of Toledo Torches in the City of Syracuse and these have worked out fairly well with the exception that they do blow out in a high wind."

Ivan C. Byram, Contractor, Sag Harbor, New York, June 9, 1928:

"It may be some fault of mine, but they always go out in a high wind or when it rains hard."

State of Ohio, Department of Highways, Columbus, Ohio dated at Ashland, Ohio, June 27th, 1928:

"Our department has been using quite a few bomb torches but our Superintendents have been complaining that they are unable to keep them lighted and I am asking if you would kindly advise me specifications covering quality of oil to use."

"We have tried fuel oil, coal oil and a mixture of the two but still the majority of the torches will not burn throughout the night."

This is from Mower County, Austin, Minnesota, June 28, 1928:

"Some time ago we ordered and received a dozen of your Toledo Torches. Since receiving them, we have tried to use them, and we find that they will not stay lighted. We would like to receive some instructions relative to their use and reasons why they go out."

G. R. Feldmann Company, Wilkes-Barre, Pennsylvania, July 25, 1928:

"We have had considerable difficulty with our customers in the sale of Torches to them, with the

*Joseph E. Withrow.*

result that a number of them have been returned to us, owing to the fact that the light goes out through the night on many occasions.

"Mr. Correale of the Correale Construction Co. to whom we sold six dozen has told us that we can take back about four dozen of them as they are not satisfied with the results obtained."

St. Louis County Water Company, University City, St. Louis, Missouri, August 6th, 1928:

"In the last two rains we have had, these torches have uniformly gone out, which we do not feel would make them a satisfactory equipment for our use.

"If you have any suggestions as to the method of using these so that they will burn during a rain, we would like to know it; otherwise, we will be unable to use these torches."

Hunter Machinery Company, Grand Rapids, Michigan, August 24, 1928:

"I was up at the Engineering Dep't. today and they informed me that they are not going to use any more Torches due to the fact that every one of their superintendents and foremen are complaining that they cannot keep them lit.

"They are pulling the wicks out about an inch and a quarter or an inch and a half according to your recommendations and are using regular kerosine oil.

"This matter was brought to my attention also by the Director of Public Service as he has received a number of calls at his home at night time from various people that warning signals are out."

O. B. Avery Company, Saint Louis, Missouri, October 2, 1928:

"We have had three complaints to the effect that rain and wind put out the flames. These are from Ackermann Brothers, 5238 Alabama Ave., St. Louis, Mo., St. Louis County Water Co., 6600 Delmar, St. Louis, Mo., and Tidd and Pimm, Columbia, Mo. We have had some correspondence about the St. Louis County Water Company. We have made the changes that you suggested but they are still complaining.

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"Tidd & Pimm are complaining that it is necessary to keep out two inches of wick in order to minimize the difficulty, but in doing so find that they burn up too much oil and that they will not last throughout the night."

The Victor Olson Contracting Company, Youngstown, Ohio, October 11, 1928:

"Our watchman advises us that he cannot make your torches stay lit on windy nights and he does not want to use them any more."

This is from James Stanton and Son Construction Company, Highland, Illinois, October 15, 1928. It is to O. B. Avery Company:

"Some time ago we bought some flares from you. These flares are using too much oil. We would like to know if you have a harder or more tightly woven wick that we could use to replace the wicks that came with the flares."

Hedge & Mattheis Company, Boston, Massachusetts, October 17, 1928:

"We are receiving reports from one of our customers who is using Toledo Torches that he is having considerable trouble with the wind blowing them out."

Clarence H. Buell, Syracuse, New York, November 28, 1928:

"The writer was talking with these people (at the Municipal Commission at Herkimer, N. Y.) yesterday and find that they are far from satisfied with the results obtained so far. It seems that these people set these torches out about 4:30 in the afternoon and take them in about 8:00 in the morning. Upon arrival at the job in the morning they have found that about half of these torches were out."

Water Commissioner, Southington, Connecticut:

"We bought 6 of your lanterns and put them out in a rain storm the other night and in the morning they were all out. We used kerosene—"

The Court:

What is the date of that letter?

A. There is no date on it.



Mr. Owen:

That was written on one of our circulars and returned to us, undated.

Mr. Bair:

Whose testimony is that, about how you got it?

Q. How did you get that, Mr. Withrow? A. That was mailed; as I remember it was mailed direct to us by Mr. MacKenzie.

Q. What kind of torch is shown on the circular upon which that communication was addressed? A. An open flame torch.

Q. The first type you were making, in 1926? A. Yes sir.

In some of the letters I have read, reference was made to the distance or the length of wick that was exposed in our old burner. We recommended an extension of an inch and a half.

This yellow tag, Exhibit 6; we attached to every torch we sent out, instructing them to extend the wick an inch and a half. That covered the open flame torches we were making in 1926 and 1927. That extension of the wick one inch and a half burned the wick very rapidly. The fact of the matter is when a torch was set out at night and taken in in the morning, an inch and a quarter had been consumed. The reason for our recommendation of the exposure of an inch and a half was that when the wick was shorter than that, the torch was likely to go out. An inch and a half was necessary to insure any stability at all.

In an effort to overcome the objections that were raised by our customers, as indicated by the letters from which I have read excerpts, the first thing we did was to take the open flame torches and submit them to different weather conditions for a period of time to try to determine just what it was that made them go out. In doing so, we discovered that a cold wind or cold weather would induce them to go out more quickly than the warmer weather; which led to the idea in some way to pre-heat the oil before it reached the flame. We took a steel rod and inserted it between the wick and wick holder and extended it down to the oil. We found that heated the oil some and did produce a better result. Then we took a tube and surrounded the wick with a tube, and inserted it in the lower end of the sleeve which held the wick, and extended it down into the body of the torch. We found

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that increased the efficiency some, but it was impractical from a production standpoint, so we abandoned that. It was too expensive and unhandy. It was a long ungainly burner.

Exhibit 7 represents one of the experiments to which I have referred. It shows a tube surrounding the wick inserted in the lower part of the sleeve, which held the wick. As result of these experiments, we shortened the tube surrounding the wick, eliminating the extension of the tube above the torch, that is the portion that was exposed to the wind, and had a flat-top burner with all of the tube extending down in the torch. That is represented by Exhibit 8. On this, we finally went into production in July, 1928. In that torch, we extended the wick tube down into the body of the tank and eliminated the exposed portion of the wick, which had been present in our earlier torch.

The theory on which we eliminated that exposed portion of the wick tube was that it was exposed to the wind and the wind would cool it, and in turn, the cooling of the tube would cool the wick and the oil contained in the wick. So that at the time we brought out this improved burner, our idea was that there should be no projection of metal above the body of the torch and where it contacted was closer to the oil.

Mr. Close worked with me in these tests and experiments. This improved burner on the market did not overcome the objections that had been raised to the first open flame burner. It did not have quite as many objections. It was not produced for so long a period. We kept it in production from July to the end of December, 1928.

I have a few letters showing complaints about that type of torch.

(Witness read from Exhibit 9)

From the Victor Olson Contracting Company, Youngstown, Ohio, September 29, 1928:

"Our watchman advises us that your torches will not stay lit.

"We purchased some of your new burners and they are no better than the other ones."

P. F. Connell Paving Company, Little Rock, Arkansas, October 16, 1928:

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Mr. Owen:

I don't believe that letter contains a complaint; it simply refers to the new burners. You might read the first paragraph.

Witness:

"Please ship us as soon as possible two dozen of your new burners for the Toledo Torch. We have had considerable trouble with the old ones and if these are OK we will order some more."

Dominion Equipment and Supply Company, Limited, Winnipeg, Canada, October 27, 1928:

"The Manitoba Telephone System tried out one of your standard Toledo Torches, also the Toledo Torch Special and they had trouble in keeping them burning. Wind and rain extinguished the flame. Their watchman has recommended not using torches, as they have very few mishaps with lanterns and he has plenty of time to keep them in condition."

The "Special" we called this—the one with the tube extending down into the body of the torch, produced in July, 1928. It was illustrated in Exhibit 8. We continued our experimental work after we had produced the torch illustrated in Exhibit 8. We realized it had not fully solved the difficulties or the objections to the old torch. It was some better, but was not satisfactory.

Our experimental work after the introduction of this Exhibit 8 torch, included the building of baffles on top of this last "Special" burner, for breaking the wind and reflecting heat back to the wick to see if we could get better volatilization. We tried many different kinds of devices,—Mr. Close and I,—and through these experiments we finally arrived at the idea of reflecting the heat from the top as well as the sides.

These experiments continued over four or five months. As to the time, Mr. Close and I put in on them, they were being conducted continually for several months. We were doing some other things at the same time, but we never stopped working on these. We always had torches going. We would actually build these different types of torches and test them out and compare them. When we found one better than the one we had, we would discard the poorer one and try new experiments. We tried them on the roof of the Factories Build-



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ing, which was high and gave us extreme weather conditions. We had a wall there that we could set the torches on and watch them from our office windows, right from where we were sitting at our desks and observe the effect. We could see them when they were extinguished.

I can produce sketches of some of these various experimental torches arranged in the order they came in our experimentation, offered as Exhibits 10-a to 10-j.

Exhibit 10-a had some baffles, spot-welded on the special burner, enclosing the wick and leaving four slits or air ports on the side, with no top.

Exhibit 10-b was the same as Exhibit 10-a, except we added some pieces around the top, joined together, which more nearly enclosed the wick, but left considerable air space for combustion.

10-c was the first attempt at a complete cap, of having any metal over the top at all, which was cup perforated all over.

10-d was surrounding the wick with a circular wall, which was perforated, and adding an imperforate top in the form of a disc.

10-e was a cup with an imperforate top and diagonally slotted holes around the side.

10-f was a cup with an imperforate top, with round holes around the side.

10-g was a cup with a more pointed top, with square holes immediately under the top, and also another set of holes right next to the torch.

10-h is practically the same as 10-g, except that it is a cut-away, showing the addition of a slight raise in the wick holder.

10-i was a cup with an imperforate top, and rectangular holes near the top and circular holes near the torch.

10-j was of a type practically the same as the present burner.

These sketches do not represent all the different types we made up and tried out. They more or less mark the milestones in the development. There were many more, but after six years I do not even remember all of them.

As result of these experiments, we placed on the market, torches like plaintiff's Exhibit 3-a. I have some circulars here advertising this new torch of the patent in suit.

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Exhibit 11-a is a circular and Exhibit 11-b a direction sheet. 11-c shows a truck flare.

As to the difference between a torch and a flare, a torch is for the contracting industry, where there are larger sizes; where they set them out over night to guard obstructions in the street. A torch has come to be known as a flare, when carried by a truck for the purpose of guarding it when it is stationed on the road at night. The burner part is the same in torches and flares. The body is a different shape. The truck flares are of smaller capacity.

We introduced this new torch on the market in January, 1929. It met an immediate and enthusiastic reception. We received many letters from our customers relating to it. They are Exhibits 12, 12a and on through as far as they run.

Q. Will you refer to a few of those letters; and you might glance through them and read the short pertinent excerpts? A. This is from the Northfield Iron Company, Northfield, Minnesota, January 8, 1929:

"P. S. The sample worked to perfection except it is hard to put out. Takes a handful of snow to put it out. You can't blow it out. Also it is hard to light. Will talk it over at the Road Show."

Hunter Machinery Company, Milwaukee, Wisconsin—

The Court:

Have you had those marked, Mr. Owen?

Mr. Owen:

They will be Plaintiff's Exhibit 12.

The Court:

12-a.

Mr. Owen:

-a, right, on through as far as they run.

The Court:

What is the caption, "Testimonials"?

Mr. Owen:

They are not testimonials; they are voluntary letters received from customers regarding the patented torch.

The Court:

"Voluntary letters of commendation"; would that be all right?

Q. You may proceed? A. Hunter Machinery Company, Milwaukee, Wisconsin, January 15, 1929:

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"With reference to your new torches, we have been besieged with inquiries as to whether or not the new style burner can be replaced in the old style torch, and if so, what the cost would be. In fact, we have some six dozen old torches on hand, and, of course, we will do our best to dispose of this stock before ordering new style torches, unless it is possible to insert the new style burners in these old style torches."

Edward R. Bacon Company, San Francisco, California, January 23, 1929:

"Without doubt we shall from now on sell only the 'Leader' Torches, equipped with Economy burner, therefore we have wired you to send us by parcel post immediately, one gross of Economy Burners complete with Adaptors, which we contemplate using in the stock of Torches approximating one gross, which we have on hand."

Q. You gave the name of "Economy Burner" to this new torch? A. We did, that is. "Economy Burner" was the name of the burner itself:

"We are very much pleased with the Economy Burner and would not be at all surprised if the end of the year 1929 finds our Company in the first position as regards sales of Toledo Torches, instead of third as in 1928.

"Congratulating you upon this remarkable improvement in your product, we remain—"

Iowa State Highway Commission, Ames, Iowa, January 25, 1929:

"We have had some little trouble with our torches blowing out in the winter gales. We understand that you have recently brought out some sort of a cap that fits over the wick and does away with this trouble. If so, will you please send us details, and, if possible, a few samples to try out. We will be glad to cover these samples on our next order if the device is what we need."

Q. Did you receive an order from the Iowa State Highway Commission thereafter? A. Yes, we did. Here is their Order No. 2363, April 24, 1929, for fifty dozen Economy Burners, complete.



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Q. Did that mean complete torches or just the burners? A. That meant the burners, to put in their torches they already had.

Board of Park Commissioners, Minneapolis, February 6, 1929:

"Mr. F. S. Geng tells us that they are at present using McCloskey bomb torches fitted up with your burners and advised that we get in touch with you since you make the torch complete. Mr. Geng stated that your burner gave good satisfaction during strong winds while the McCloskey burner did not.

"We are at present using red lanterns which are of little use."

Q. Do you know what McCloskey burner that referred to? A. Presumably it would be the open type burner. The fact of the matter is at the date of that letter he had not yet come out with his new burner.

Northfield Iron Company, Northfield, Minnesota, February 8, 1929:

"I demonstrated the Torch on one of our windiest nights here lately and was surprised the next morning to see what a small amount of oil had been consumed. During this demonstration one of the State Highway Commissioners (Mr. C. T. Bates) took a couple of his friends out to examine it, said he kicked and rolled it, but it kept on burning."

General Utilities Company, Inc., Norfolk, Virginia, February 26, 1929:

"The writer talked to Mr. E. T. Gresham of E. T. Gresham & Company over the phone today regarding the Economy Burner which we furnished him to try out on his present Toledo Torches and he stated he is very well pleased with this Burner.

But—the feature that seemed to impress him more than anything else was the fact that with the new Economy Burner the light or at least the Torch gave a much better light and at the same time the Economy Burner eliminated all chances of their being blown or rained out, as he stated that with the standard burner that regardless of wick, etc. as he had followed instructions carefully that now and then a torch would either be

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blown or rained out but this was not the case with the Economy Burner.

He said that the Torch also burns longer with the Economy Burner and that he had followed instructions carefully but it did not burn 50% longer nor could he see that there was a saving of 50% in fuel but he did state that the torch did burn longer and gives a good deal more satisfactory light but it did not amount to 50% and he thought that 25% was a little closer."

Edelen & Boyer Company, Philadelphia, February 26, 1929:

"We have had a number of inquiries lately and several of them fairly good size, but have lost them due to the fact that we did not have the torch with the Economy Burner. What we should have is Economy Burners with Adapters to fit 91 Standard Torches which we have on hand.

Will you kindly ship these to us so we can bring our torches up to date and dispose of them."

Cusack Hardware Company, Philadelphia, April 5, 1929:

"We note from recent sales that your new torch 'Leader Model' is becoming quite popular."

Andrew Weston Company, Inc., Woodmere, New York, April 16, 1929:

"We have tried one dozen of these protectors and find that your torches equipped with this protector are far superior to the ones with the unprotected flame."

The Ohio Bell Telephone Company, Cleveland, May 20, 1929:

"Our Plant Department have just advised me that the torch will stay lit in heavy storms and it is almost impossible to either upset or extinguish by traffic or by storm. They advise me that no doubt the torch is a very good one, but as I advised your Mr. Lasko who called upon me, that due to the fact that our company did very little conduit work, the majority of which is contracted we do not feel that we will be in a position to make use of a torch of this type. The cases would be

very remote where it would be necessary for us to use either illumination or danger signals for work of this nature."

Manchester Water Company, Manchester, Connecticut, May 22, 1929:

"We are very much pleased with the torches that we purchased from you a short time ago and we would like you to send us by freight 6—'Champion' Torches, 3—Economy Burners, 3—Wicks for same."

R. B. Wing & Son, Albany, New York, June 1, 1929:

"We have been selling quite a few of your torches lately which we had in stock with the old type burner on them. However, most of our customers seem to prefer the economy type burner, and we have therefore for their convenience taken off the old type burner and put on the new ones."

United States Department of the Interior, Indian Irrigation Service, Federal Building, Los Angeles, California, September 3, 1929:

"Will you please advise who your agent is for Toledo torches in the city of Los Angeles, California."

I have called several dealers who I thought perhaps could inform me but have not met with success.

This office is in the market for six of these torches and we do not wish a substitute."

Pidgeon-Thomas Iron Company, Memphis, Tennessee, September 7, 1929:

"The writer was in conversation with the General Superintendent of the Memphis Street Railway Company today about Toledo Torches and Mr. Haylow, who is the superintendent advised me that he had a number of torches on hand but they were not satisfactory, due to the fact that the flames would spread and go out under heavy winds of fast moving traffic along where these lights were placed. He also advised that he was in Cleveland, Ohio a few weeks ago and while there visited with the Superintendent and General Manager or whoever is in charge of the Cleveland



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Street Railway Company, he did not mention the name, and they advised him that they were using Toledo Torches for their lighting system on same design. He explained to them the same trouble that he explained to me and they advised him that they had the same trouble but you corrected this trouble by furnishing them with caps for their torches and since getting these caps the torches are answering the purpose much better than anything else they could use and in fact they were more than pleased with the results they were having.

Mr. Haylow, here with the Memphis Street Railway Company advised that I write you about this trouble and see if you would not furnish them with caps for the torches they now have on hand. If so, he was inclined to believe that he could use more torches for his work, and I might add that they have very extensive improvements going on at the present. I believe that if you could help us on this subject we would be in position to demand and get practically all of his requirements in the way of danger markers, which namely is the Toledo Torch."

General Utilities Company, Norfolk, Virginia, November 13, 1929:

"The last firm was a little skeptical about the Torch and took six to try out and in ten days came in and bought two lots of six more and seemed very enthusiastic about them."

The Court:

How do you put these lights out?

A. You can blow them out with your mouth.

T. A. Keeley Company, Dover, Ohio, May 20, 1930:

"We have just received a shipment of two dozen of these torches through the J. C. Keeley Co., Canton, Ohio, and we are so pleased with them that we have decided to discontinue the use of lanterns in our work in the future."

Howard Cooper Corporation, Portland, Oregon.

May 28, 1930:

"Answering your letter of May 26th regarding the over-shipment of Standard Toledo Torches.

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would advise that we do not have any demand for the Standard Torches. As you know, we advocate and push the sale of Leader Torches, with Economy Burners."

McMaster-Carr Supply Company, Chicago, August 14, 1930:

"We received an order yesterday for fifty (50) Leader Torches which we were obliged to send to your factory because our customer wanted immediate shipment and we do not have the necessary number of burners on hand to convert the torches which we have in stock into the Leader Model."

From our experiments referred to, we found that some types of torches would work better in some conditions of weather and others in other conditions of weather.

We would develop a burner that would withstand wind and rain; then when we got a very calm day, it would not work as well as some of the others. We had to combine a number of features together to get one that would work in both cases. That is the burner we finally developed. That is the one that had no holes in the bottom. It would not work so well in calm weather, although it did work in the wind and rain.

If we had large openings in the top, it would work in wind but not in perfectly mild weather.

Q. You referred this morning to some orders from the State of Iowa on this new torch. Refer to the other orders you received from the State of Iowa or from the Highway Department both for the completed new torch and for the burners for use in the old torches. A. I have them here.

Q. You have orders? A. I have them here.

Mr. Owen:

These orders will be offered as Plaintiff's Exhibit No. 13.

Q. Will you refer to those, just giving the items that refer to either the complete new torch or the burner, giving the dates. A. From Iowa State Highway Commission, under date of March 22, 1929, 3 Economy Burners, delivered; April 12, 1929, 50 dozen torches; June 26, 50 dozen torches;—these are all Iowa State Highway Commission—

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Q. Yes? A. June 26, 9 dozen Economy Burners; January 5, 1932; 10 dozen torches, 4 Economy Burners; March 1, 1932, 10 dozen torches; March 12, 1932, 20 dozen torches; July 13, 1932, 10 dozen Economy Burners; August 3, 1932, 40 dozen Economy Burners; August 9, 1932, 20 dozen Economy Burners; August 24, 1932, 20 dozen Economy Burners; September 15, 1932, 20 dozen Economy Burners. Those are all of Iowa State Highway.

Q. These orders for Economy Burners; what did you understand they were for? A. They were for substituting on torches that formerly were of the open flame type.

Q. They had been a customer of yours on the open flame torch, had they? A. Yes, we sold many of them.

Q. Have you any orders or a copy of any orders from different customers, ordering this Economy Burner for use on the old type torch? A. I have.

Mr. Owen:

These other orders will be offered as Plaintiff's Exhibit No. 14.

Q. Will you refer to them in the same way?

The Court:

What is the use of going into detail on them. Give us the aggregate.

Mr. Owen:

I don't believe they are aggregated.

The Court:

Just put them in a bunch. You are going to show ultimately how many you sold?

Mr. Owen:

Yes.

This does not represent all the Economy Burners we sold. These are just some of the orders I selected.

I stated that we did not sell the old open flame torch for use as a warning signal for parked trucks and busses. We do sell our present Economy torch and burner for that purpose.

That field first came to our attention from a dealer writing in to us and informig us of a law passed in Michigan requiring trucks to carry torches as warning signals when they were parked on the road at night. We followed that up by advertising over the radio from Detroit. I don't remember the details; either we or one of our dealers submitted the Economy burner to the Michigan State Highway Department.



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Exhibit 15 is a circular reproducing a copy of a letter we received from the Michigan State Highway Department dated October 24, 1929, accepting our Economy torch for that purpose.

Witness reads letter, which is part of Exhibit 15, (Record Page 45).

After that we sold these Economy burners and torches for similar uses in many States. As far as I know, they have been accepted in all States where such regulations have been adopted. I don't know of any where they have not been accepted. We sell a great many of them for that purpose.

There is no place I know of where red lanterns are acceptable for these purposes under those regulations, nor are there any open flame torches acceptable so far as I know.

We marked our present torches and flares "Patent Pending" as soon as we made application for patent, and just as soon as the patent issued, we marked them with the patent number. All of those made and sold since the issuance of the patent have been marked with the patent number.

In 1933, we sold 76,919 Economy torches, flares and burners. In 1934, 56,401.

Bolser and Kari-Keen torches first appeared on the market in 1933 about the middle of the year. They have been keen competition for us since their appearance.

Other companies have sold torches or burners embodying similar construction since we put our patented torch on the market. There was the Shanklin Manufacturing Company, the K-D Lamp Company, the Doray Lamp Company, The Anthes Force Oiler Company and some others. They all entered the field subsequent to the time our torch was introduced. Some of the Companies have taken licenses under the patent in suit, including the K-D Lamp Company, Cincinnati, Ohio, April 30, 1934; The Doray Lamp Company of Chicago, April 14, 1934; and The Anthes Force Oiler Company of Fort Madison, Iowa, on August 15, 1933.

Exhibit 16 is the Anthes license. The licenses are all on the same terms. The rate of royalty is 3c on each complete burner, whether sold as a burner or torch. I don't know of any of them selling just as burner. They all sell complete torches.

Exhibit 17 shows experiments for the purpose of giving data on the reduction in oil and wick consumption by our patented torch. These tests were made with a torch using our open flame burner, a truck flare of our make with the Economy burner, a Bolser flare and a Kari-Keen flare. We filled them with oil, weighed them, put them on the roof and lighted them under conditions that were recommended for their operation to the customer.

By that I mean, in the old style open flame burner we extended the wick an inch and a half and in the other torches we extended them about one-eighth of an inch, which was what was recommended.

Exhibits 3-a, 3-b and 3-c are the same as the Bolser, the Kari-Keen and our present torch used in these tests, and the other, the open flame torch was our first type with the wick tube extending up above the tank.

On one test, the torches were lighted at 8:25 a. m. on April 12th and extinguished at 5:05 p. m. The open flame torch used two pounds, one ounce of oil. The truck flare with the Economy Burner, one pound, two ounces; the Bolser flare, one pound, nine ounces; the Kari-Keen flare, one pound, four ounces.

On April 15th, they were lighted at 8:00 a. m., and run to 5:30 p. m. The open flame burner used 2 pounds, 13 ounces; the Economy burner with the truck flare, 1 pound 2 ounces; the Bolser flare, 1 pound, 10 ounces; the Kari-Keen flare, 1 pound, 5 ounces.

On April 16, they were lighted at 8:45 a. m. and ran to 6:00 p. m. The open flame consumed 2 pounds, 14 ounces; the truck flare with the Economy burner, 1 pound; the Bolser flare, 1 pound, 10 ounces; the Kari-Keen flare, 1 pound, 4 ounces.

On April 17, they were lighted at 8:30 a. m., and ran to 5:30 p. m. The open flame used 2 pounds, 14 ounces; the truck flare using Economy burner, 1 pound, 2 ounces; the Bolser flare, 1 pound 6 ounces, the Kari-Keen flare, 1 pound, 4 ounces.

On April 18, they were lighted at 8:10 a. m., and ran to 5:30 p. m. The open flame used 2 pounds, 13 ounces; the truck flare using the Economy burner, 1 pound, 3 ounces; the Bolser flare, 1 pound, 12 ounces; the Kari-Keen flare, 1 pound, 5 ounces.

April 19, they were lighted at 8:40 a. m. and ran to 5:20 p. m. The open flame used 3 pounds, 4 ounces; the

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truck flare using the Economy burner, 1 pound, 7 ounces; the Bolser flare, 1 pound, 10 ounces; the Kari-Keen flare, 1 pound, 3 ounces.

On April 30th, we made a different test. We had a windy morning. We ran from 8:40 a. m. to 2:40 p. m. with the same four torches. The truck flare using the Economy burner, the Bolser flare and the Kari-Keen flare remained lighted throughout the period. The old style burner was extinguished by the wind at 9:07 a. m., 9:30 a. m., 9:59 a. m., 10:10 a. m.; and then there was at 11:32 a. m. that Mr. Close re-lighted,—also at 12:54 p. m., 1:06 p. m., 1:14 p. m., 2:15 p. m., and 2:40 p. m. When the old style burner was extinguished at these hours, it was immediately relighted either by me or Mr. Close. The other types were not blown out.

We also made tests of the open flame burner and our Economy burner for the purpose of determining wick consumption. They are shown in Exhibit 18.

We put the wick out on the open flame burner one inch and a half as prescribed in our directions, and on the Economy burner from one-sixteenth to one-eighth of an inch. We found that there was much more wick consumption with the open flame burner than there was with the Economy burner.

Of the four different styles shown in these notes—Exhibit 18—No. 1 was using the present burner; No. 2 was the present burner, but with a slotted hole cut in top; No. 3 was the present burner with the top completely cut out; and No. 4 was the old open flame burner.

Mr. Close worked with me on the last test (Exhibit 18) and the previous one (Exhibit 17) was with Mr. Freheit, one of our employees.

## CROSS EXAMINATION

The letters of Exhibit 5 all refer to flares like Exhibit 4, the old open wick flare. I imagine we answered these complaint letters. I do not have the answers here. I will produce the answers.

We are no longer selling flares like Exhibit 4. We stopped about 1932.

Defendant's Exhibit A is a circular put out by the Toledo Pressed Steel Company, published prior to July 20, 1929.

As to whether when this circular was put out, we had made tests to determine whether the torch referred



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to in the circular would stand wind and rain, I don't know when this was put out. I would say that the circular was put out before the complaint letters of Exhibit 5.

The torch of Exhibit 4 is one of which we sold a very considerable number. There is no difference between it and the torch of defendant's Exhibit A.

For all practical purposes, the torch we sold a good many of before we put out the torch involved here, is the torch of Exhibit A.

As to when it was we found out that this torch of Exhibit A, which is the same as the torch of Exhibit 4:

"will burn through wind and rain for more than twenty-four hours, if necessary, on one filling."

that was some of the tests we had made at the time they were first put out. That is the same kind of torches referred to in the test report I have made here, that went out so many times in the wind. We did send out to the public this circular from which the quotation has been given. We rarely got complaints about the torch of the patent going out in the wind. Usually we discovered on investigation that it was because of their not understanding the instructions. Some times it is a choked wick; sometimes it is bad oil; but never when they are properly adjusted and proper oil used.

We never have complaints about that torch going out unless it is improperly adjusted.

It is true that I did not read from Exhibit 5 that part of the letter from Clarence H. Buell, dated November 28, 1928, reading

"The reason that bunch of torches went out was because they burned up all the kerosene in the torch."

We did not go into production on this torch like Exhibit 7.

Q. With reference to Exhibit 8, do you have the complete circular from which Exhibit 8 appears to have been cut?

Mr. Owen:

I have some of them here. I don't know that I have them here, but I have them at the office, I am sure. I will give you one tomorrow morning.

*Joseph E. Withrow.*

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As to when the circular Exhibit 8 was put out, I would have to guess at it. I imagine it was put out about July, 1928.

As to whether this device at that time would not go out in the wind depends on the intensity of the wind. We thought it was better in comparison with the old torch, Exhibit 4. We did not abandon it until we evolved the burner we use at the present time, which was so much better than that, we changed.

When we said in this circular

"The secret of all weather dependability"

we meant it was the best one for all weather dependability that we then made.

These drawings of Exhibits 10-a to 10-j inclusive were made recently from memory and the order in which we put them was also from memory. We have no shop records available showing when these various devices in these 10 drawings were made. My recollection is they were developed and made in the order in which they were introduced here. Mr. Close and I designed them and made them.

We both designed the one of Ex. 10-a. I can not distinguish between the part contributed by me and the part contributed by Mr. Close. We both contributed equally to the development of 10-b. As to whether that is true of 10-c to 10-j inclusive, I don't remember any distinction of any kind. We discussed each design between us before going into production. We worked together and discussed many ideas we never even made models of and discarded them when seemed impractical.

As to what became of the burners, 10-a to 10-j, inclusive, we carefully preserved them. When we removed from the Factories Building to our present location, they disappeared in transit somewhere. When we got there we looked through the building and couldn't find them. We searched everywhere and could not find what had become of them. So far as I know, they are not now available. We even went down to the city dump and couldn't find them there.

Mr. Close made the drawings here to illustrate these devices 10-a to 10-j.

We refreshed each other's memory on the matter.

Q. It is true, is it not, that the changes, the successive changes from 10-e to 10-j, were made not so much

*Joseph E. Withrow.*

to prove the quality of the burner as an operating device as to produce a burner which could be better produced with the factory equipment that was available.

A. Not without consideration of performance; there was that element also in it.

I would say in calm weather there is better performance in Exhibit 10-j than in 10-e.

We put out our first truck flares, I think in 1930 or 1931. I could not say whether I have a copy of our first advertising literature on them. I will produce it if I can find it.

Mr. Owen:

I will if I have it. This Exhibit 11-c is the only one I brought over.

Witness:

That is not the first one.

Mr. Bair:

What I want to get is the first one.

Mr. Owen:

Mr. Close says the first one is this Exhibit No. 13 with the letter in it.

I am not sure when that was put out, whether it was in 1930.

The Court:

The letter is dated?

Mr. Owen: --

1929.

Q. Your recollection is that the circular was put out in 1931? A. No, we were making that torch at that time.

The Court:

1929 is the letter.

Mr. Bair:

What I am trying to find out is whether the torch as a truck flare was being put out at this time in October, 1929, or whether it was put out later.

Q. Do I make myself clear? A. Yes. I was trying to clear my mind on the matter just when it was we made the model F. It was either then or shortly after that.

Q. Were your first truck flares the old construction torch without change? A. You mean the open flame burner?

Q. No, no, the one with the Economy burner? A. Oh, no; we made a flatter torch which was not quite so tall as those.



*Joseph E. Withrow.*

Q. That is the one that came out in 1930 or 1931?

A. Yes, that is my recollection.

Q. Referring now to Exhibits 11-a, -b, and -c, can you tell us when they were put out? A. 11-a was—we have had so many torches I would not know exactly what the date of that was; it was after 1929; my recollection is that it was one we had three or four years ago. Exhibit 11-b, I believe is the same as we have used since the introduction of the Economy Burner, in January, 1929. c I think was put out about June or July of last year.

Exhibit 11-c was the first literature we put out with two or three flares arranged in a box or container, for sale to vehicle drivers. That was about a year after both Kari-Keen and Bolser had put out flares,—three in a box.

I do not know whether the requirements of Wisconsin and Indiana permitted the use of open wicks for highway construction signal flares. I don't know whether or not they both permitted the use of red lanterns. I am not familiar enough with the Highway Commission requirements to say whether any of them or what proportion of them permitted the use of fusees. A fusee is a powder enclosed in a cardboard container like the red flares they have. I think it is the thing they used on railroads for signals.

Q. Do you know how many of the state highway commissions' specifications permit the use of fusees for highway signals for trucks? A. To my recollection I have seen literature stating they were used in the State of Pennsylvania; they used them in Ohio; and others, I wouldn't know.

In regard to other companies selling torches familiar to the ones involved under our patent, I mentioned four companies. There are still others. There are some differences in all of them, slight differences. The Dietz Company in 1929 manufactured a torch with a hood on a bale. When the bale was placed erect, the hood would cover the flame. They kept to that type until they developed a flare for use on trucks. The first of those I saw was about June of last year. Dietz was not manufacturing this first hooded type when we went on the market with our Economy burner.

Referring to the tests of Exhibit 17, the wicks used in the four burners were not of the same size.

*Joseph E. Withrow.*

As to whether the size of the wicks involved makes a difference in the amount of fuel consumed, strange to say, I found out at that time that is not true. It would be a wide statement to say that wicks of all sizes consume the same amount of fuel.

If the construction of the flare is otherwise the same, I have tested with one-half inch and three-quarter, which are the two sizes in these two torches, and I have come to the conclusion from experiments that it is a matter of surface exposure and not diameter of wick.

I don't remember any conversation in which any representative of the Anthes Company told me they would rather take the license than go to the expense of litigation. Mr. Anthes did not tell me that that I know of.

At the time we prepared the application for the patent in suit, we did not have any idea of using the torch as a track flare. It is not true that these torches or flares can be used either for signals or for heating purposes. That idea was a failure. Once in a while you get an individual who has an idea and suggests a use for them, and often they will try them out and say they are satisfactory, but when you follow up, you will find out they are not.

Q. So that the advertisement put out as part of Defendant's Exhibit A, which shows the Toledo Torch used for heating a batch-box, shows a thing that did not pan out. A. For the one individual; but we could not make any commercial success of it.

As to why, I don't know, unless it did not produce sufficient heat in cold weather to heat the batch box. I couldn't say whether it would be a matter of how many torches you used.

### RE-DIRECT EXAMINATION

Our wick referred to in Exhibit 17 was of three-quarter inch diameter on the patented flare and the open flame one. The Bolser and Kari-Keen were one-half inch wicks, I would say. They were the wicks that came on the commercial flares.

Exhibit 21 is a Dietz Company lantern catalog. I saw a catalog similar to this long before 1925. Dietz Company first put out a torch or flare around January, 1929. It is illustrated in Exhibit 22. It was put out prior

to the placing on the market of our patented torch involved in this case, but almost at the same time. It was put out only for a short time.

Exhibit 23 represents a later type of torch put out by the Dietz Company. It followed their open flame type. They did not sell the open flame torch very long. It was a matter of months. They put out the torch of Exhibit 23 early in 1929.

I would think we put out our present type torch in January of 1929. This Dietz torch came out after that.

Exhibit 24 illustrates the latest Dietz type recently put out. It came after Exhibit 23 but whether it supercedes it or not, I could not say.

I have a copy of a letter Mr. Fraser sent them notifying them of infringement.

We sell the burner alone for \$4.00 a dozen with the adapter. We get between 30c and 40c for the torch itself. That is the flares. The torches average about 80c or 90c for the complete torch. The 3c royalty applies to the complete flare and to the burners when sold separately.

## RE-CROSS EXAMINATION

I will do my best to find the earliest record of a sale or of distribution of literature soliciting sales of Economy burners.

## LYMAN W. CLOSE

I am Vice President of the Toledo Pressed Steel Company and have been connected with the Company since its incorporation in 1925. It succeeded a partnership that was making warning signals prior to the date of the incorporation about three months. The first ones were marketed through Mr. McCloskey. We discontinued marketing them through him in May, 1925.

Exhibit 25 is a circular which represents the McCloskey torch which we made for them. McCloskey or his associates continued the manufacture and sale of that torch after they severed relations with us, until March or April, 1929. Then they revised the burner, putting a cap over the wick, similar to the one we brought out. About three months after we brought out our present burner, McCloskey came out with this enclosed type.



Exhibit 26 represents the torch McCloskey brought out in March or April of 1929.

We brought suit against McCloskey for infringement of the patent in suit.

The Court:

You have already covered that. He went through bankruptcy and you abandoned the suit.

I worked with Mr. Withrow on the experiments conducted in bringing out the present torch. I made the sketches, Exhibits 10-a to 10-j. They represent developments during the progress of experimentation.

I don't know of any place where open flares and red lanterns are used as warning signals on highways in connection with parked trucks and busses at the present time.

I am familiar with the complaints made against the open type torch and with the correspondence with reference to the new patented torch.

I would say that the trade everywhere generally accepted the present type torch. I know of some complaints made on its performance. After chasing them down, they have been discovered to be only due to faulty operation or lack of following instructions.

The Court:

With the method of use rather than the merit of the device, correct?

A. Right.

I have attended two tests to which warning signals were subjected by different States in deciding whether or not they will be acceptable for use on their highways,—one at the Iowa State Highway Commission and one at the Ohio.

The Iowa one consisted of a wind test and a rain test, as well as a duration test. The wind test was conducted in a wind tunnel constructed of a large sewer pipe, through which a current of air was driven. The torch was placed at one end of the tube for one velocity and at the other end for another velocity.

The Court:

Would an electric fan blow out your torch?

A. If placed close enough.

The Court:

How close would that be?

A. Six inches, and directed right at it.

The Court:

Six feet away it would not do it?

A. It would not do it.

The wind velocities in the Iowa test were twenty-six and forty miles an hour. The torches were required to withstand the test five minutes at forty miles an hour and fifteen minutes at twenty-six miles an hour. There was also a precipitation test in which a certain amount of water at a measured rate was dropped into the sewer pipe and deposited against the torch, not only through falling but being driven by the wind.

I have a letter (Exhibit 27) from the Iowa State Highway Commission explaining their tests, how they are conducted and the results as to the different types of signals that have been submitted. I called up Mr. Morris who conducted the tests and asked him if he would give me a statement and this letter was sent in response to that requested.

In the Iowa test, there were ten different torches. Three or four of them were not in commercial production. Of the commercial torches, there was the Bolser, the Kari-Keen, the Stay-Right, ours and McCloskey's.

No open flame torches were submitted, although we did make a test on one of our own out there. The open flame torch did not pass the test.

At the Ohio Commission test, they had a similar test, except it was a wind tunnel in the mechanical laboratory. It was a wind that had an accurately calibrated wind velocity; they could vary it to suit themselves. The torches were placed in proper position in front of the orifice and the wind blown upon them in the same manner as in Iowa, except they had a thirty-five mile an hour wind which the torches had to stand for fifteen minutes.

The torches tested in Ohio were the Shanklin, the torches of the defendants, our torch with the Economy burner and our torch without. Our Economy burner passed all the tests and the open flame did not.

We determined by that test that a wind velocity of approximately thirteen miles an hour would extinguish the open flame.

Our Economy burner was not extinguished in any direct test. We finally did smother it out, but did not blow it out. The test with a measured precipitation fall-

ing upon the top of the torch did not affect the Economy burner. We did not test the open flame in the precipitation test.

I have regulations issued by the State Highway Departments of Iowa, Ohio and Indiana for the use of warning signals by trucks and busses when parked on the highway.

The Truck Drivers' Book of Rules issued by the Public Utilities Commission of Iowa, on Page 4, has this paragraph:

"Place lighted pot torches 100 full steps ahead and behind the vehicle at least one full step out in the road, and a lighted pot torch along the side of the vehicle which others pass. In the daytime use flags instead of pot torches, except at side of vehicle."

On page 3 of the Bus Drivers Book of Rules issued by the Public Utilities Commission of Ohio, dated February 1, 1935, and the other one is also dated on the same date, it has the same regulation.

In the Iowa Motor Vehicle Laws, 1934-1935, which is marked "Amended to March 12, 1934", I read from Pages 21 and 22 as follows:

"Chapter 83, Laws of the Forty-Fifth General Assembly, Trucks must be equipped with portable flares.

"Section 1. Motor trucks and combinations thereof operating on the highways during the period from one half ( $\frac{1}{2}$ ) hour after sunset to one-half ( $\frac{1}{2}$ ) hour before sunrise shall at all times be equipped with portable flares which may be plainly visible for a distance of five hundred (500) feet. The operator of a motor truck or combination shall, immediately upon bringing his vehicle to a stop upon or immediately adjacent to the traveled portion of the highway at any time during the period from one half ( $\frac{1}{2}$ ) hour after sunset to one-half ( $\frac{1}{2}$ ) hour before sunrise, place a flare at the side of such vehicle and in plain view of all traffic, and shall maintain it in such position during the time such vehicle remains parked."

There are more of these regulations but I think that is the substance of them.



I have here a booklet entitled "Motor Carrier Legislation Enacted by 78th Indiana General Assembly 1933" and reading from page 10:

"Every motor vehicle used for the carriage of passengers for hire, and every motor truck and commercial motor vehicle shall be equipped with at least two red warning flags and two brilliant-burning danger or caution signals, so constructed as to burn with a brilliant light.

While any motor vehicle used for the carriage of passengers for hire, or any motor truck or commercial motor vehicle is stopped on the traveled portion of any highway outside the corporate limits of any city or town, for a purpose other than taking on or discharging passengers or freight, or complying with traffic requirements, the operator thereof shall cause to be displayed in a prominent position above the surface of the highway at a distance of approximately three hundred feet from such vehicle, in the direction from whence it was coming, and also in the direction in which it was proceeding, a brilliant-burning danger or caution signal, as described in section 48, if such stopping occurs between one-half hour after sunset and one-half hour before sunrise, or if the weather conditions are such as to produce low visibility, and a red warning flag if such stopping occurs at any other time."

Exhibit 27 is the letter received from Mr. Morris concerning the Iowa tests.

Exhibit 28 is one of our first open flame torches sold beginning in 1926.

Exhibit 29 is one of our second open flame burners, on which we began production in July, 1928, and on which we continued until January, 1929.

Exhibit 29 is the torch shown in the circular, Exhibit 8.

Exhibit 30 is an advertisement which correctly illustrates the torch, Exhibit 29, as it is ready for use.

We first sent out circulars and advertising matter of our Economy torch of the patent in suit in the latter part of January, 1929, the date of the road show. I distributed literature at the road show. I imagine it was around about the 16th or 20th of the month. It usually is.

The Dietz open flame torch illustrated in Exhibit 22 appeared on the market in December, 1928 or January, 1929. We first became aware of it in January, 1929, practically coincident with the time we brought out our Economy torch. To our knowledge, it did not precede our production of the Economy torch by much, if any.

The Dietz torch shown in Exhibit 23, I first knew of in August, 1929. The first I knew of the Dietz torch of Exhibit 24 was in 1934.

The McCloskey torch shown in Exhibit 26 first appeared on the market about March, 1929.

I witnessed the tests referred to in Exhibits 17 and 18. The statements of these Exhibits correctly represent what took place.

Our first sale of a flare for use as a warning signal in connection with trucks or busses was made on October 16, 1929.

### CROSS EXAMINATION

That sale on October 16, 1929 was of a shortened torch, known as the Model F, made particularly for trucks.

The original arrangement with Mr. McCloskey was that he sold torches for us. The arrangement finally devolved into an arrangement when we manufactured them for him. When we originally went into the matter, we made a torch that we had developed. That torch we manufactured and he sold.

The next step was that he had outside financial help in securing the patent on the torch in his name, to market as his torch, because he was doing the selling.

Q. And then you manufactured that torch for him?

A. Yes, we manufactured a certain number of those for him.

Q. Then, as I understand it, after that he made arrangements with some other manufacturer to make them for him? A. Yes, sir.

Q. And then when that happened, you continued to make that same kind of torch you had made for him?

A. The same general type, although it was redesigned.

He sued us for infringement for making that torch.

The reason red lanterns are not used for truck flares is that they are not distinguishable readily from other lights on the road, such as tail lights.

*H. R. Van Deventer.*

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The reason open flares without hoods are not used is because they go out easily.

At the Ohio test, no test was made for rain alone without wind.

It is true that when those tests were made, the first of our flares which was submitted was not accepted. Then we changed the height of the wick holder, but there was no change in the cap.

Q. It is true, is it not, that your present type flare made under the patent can be put out by dropping water or rain, if there is no wind. A. I presume a sufficient amount of water would do that.

I don't think with a downpour of water alone, the present flare made under the patent, will go out quicker than the old flare with the open wick. I have never seen that tried in comparison.

Exhibits 28 and 29 are frequently called lighted pot torches. Either of them could be fairly called a portable flare.

### RE-DIRECT EXAMINATION

The McCloskey suit against us involved a patent on the self-righting feature, the weight in the bottom of the torch. The patent was declared invalid.

We patented a method of attaching the weight in the torch. We still use it.

Plaintiff's prima facie case closed.

### H. R. VAN DEVENTER

My residence is New York City. I am a consulting engineer and patent attorney.

I graduated from College as an engineer in 1903, and went into telephone and construction work, and in 1905 began the manufacture of telephone apparatus. During the next 15 years, I engaged in the manufacture of small electric and mechanical devices, either in an engineering capacity or in an executive capacity responsible for manufacture. For the major portion of that time, I had responsibility for the design and construction of tools and dies and the general supervision of the manufacturing program involving mechanical and electrical devices such as telephone equipment and ignition devices for automobiles.



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*H. R. Van Deventer.*

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Later on I helped design and was one of the patentees of the Dixie magneto which became standard for aircraft for the Allies during the war.

I have had considerable experience as a consulting engineer and have testified as an expert witness in a number of patent suits.

For the past eight years, I have acted as a consulting engineer and am a licensed professional engineer in the State of New York. I am a member of various engineering societies and have contributed papers to the technical press on various engineering subjects.

I am familiar with the various types of burners for consuming fuel. A burner is a device for burning fuel or fuel vapor. You can divide them roughly into two classes—vapor burners or burners using liquid fuel and employing some fuel-feeding means, such as a wick. There are burners, which are a combination of both, such as the device involved in this suit.

The burners in which we are interested here may be of the wick type. I suppose it is almost as old as history itself. Later they developed burners in which instead of the fuel being fed to a point by a wick and there ignited, they took the fuel to some point and vaporized it, and then burned the resulting gas. In order to do that it was necessary to bring to the point of combustion a sufficient quantity of air. These burners in general can be used either for lighting or heating or both. Whether you get the maximum amount of light and the minimum amount of heat, and vice versa, depends upon a number of adjustments or a number of different things that possibly can be done to the same burner. In the case of some burners, the visibility of the emitted flame would be regulated by the amount of air you supplied the burner. That is the case with a great number of the so-called gas burners.

Some typical types of burners are oil lamps. They had a wick. They had some means of supplying the wick with air; and they usually had a chimney positioned above the wick. Then we have torches such as the plaintiff's Exhibits 3-a, -b and -c. We have the railroad torch, which in the models with which I am most familiar, is somewhat similar to the bomb type torches, plaintiff's Exhibits 28 and 29.

There is another class of torch, which at one time was in common use, which is shown in a patent to Heath.

No. 66021, dated June 25, 1867, used for lighting gas lamps in the street. City lamp lighters usually carried such lighters. They had a wick. The wick has no reference character. There is the wick tube J, wherein the wick is introduced. This is ready for the wick. The wick does not project through the rim h. It has a double wall casing having air holes for admission of air, below the point of combustion, and holes in the double casing through which flame could issue. These torches are usually pushed through the hood of the street lamp and the gas cock turned on and the gas is ignited thereby. Oil was contained in the reservoir F. These passed out of use because gas lighting passed out of use, and I expect it would be very difficult to obtain one. I tried to do so, but could not find one.

The development of burners proceeded on, and the so called vapor burners came in. The situation in 1928, when plaintiff's patentees came in the art, was that there were available both burners of the wick tube and the fuel type in many different models, both with and without caps. When I say "cap", I mean a projecting hood to shield the flame or to become heated by the flame in order to change the wick burner into a vapor type burner, or partially change it into such a burner.

By vapor burner, I mean one having a part which is heated, which heat is transmitted to the wick in a wick type burner in order to raise the temperature of the fuel in the wick and vaporize the fuel at the point of combustion. That is what happens in the ordinary lamp.

The vapor type of burner, if it has a piece like the old student lamp had in the top of the wick, which became heated and heated the center of the wick holder down about half an inch. You recall those lamps were very economical in the use of the wick because they operated partially as a vapor burner. That is the type with the old cylinder, circular lamp.

I have read and studied the patent in suit and the file wrapper and am familiar with defendant's devices, Exhibits 3-b and 3-c, here complained of.

Analyzing the structure of the device of the patent in suit, it comprises in effect only four major elements. The first is a reservoir, marked 1 in plaintiff's Exhibit 2-a, to which I will refer. The second main element is a wick tube or holder 6, which may be in heat relation to the cap 8. The third main element is a wick within the holder. It is impositively included in the patent; we can

infer that it is there. The fourth element is a burner cap 8, which has an imperforate top and openings in its side wall to permit the ingress of air and egress of flame. Those are the four major elements of the patent.

The wick holder of the plaintiff's patent is in heat exchange relationship with the cap. The holder 6 has a laterally extending flange 5, which rests upon a threaded member screwed into the top of the casing 1. This same member engages the lower threaded end of the cap 8, so that when the cap becomes heated, heat is transferred directly to the flange 5 and conducted into the tube constituting the wick holder, so that the heat is directly effective on the wick.

Exhibit C is one of the Toledo torches with a cut away section. The cap here conducts the heat down against this flange and into the metal body of the tube and thereby to the wick.

The Court:

Heats the metal body and then the wick and then the fluid in the wick?

A. And vaporizes some of that fluid that rises into the dome and mixes with the air that goes into the small ports at the bottom, and that furnishes the ignition.

Referring to plaintiff's patent in suit (Figure 1) the heat exchange just referred to takes place between the screw-threaded lower end of the cap and through that to the fitting or part of the torch body marked 4 and then through the flange to the wick tube.

In the development of the art of burners, as far back as I can remember, we had the kerosene lamps, which had a reservoir to contain the oil, a wick, and a holder for the wick, so that the upper part of the wick projected through the holder. Then there was a guard usually in the form of a chimney, placed around the wick to prevent drafts from getting in, and the flame from getting out. That type of lamp is exemplified in the Knowles patent, No. 22,771, issued in 1859. This patent is not set up in the answer and is referred to as showing the state of the art.

The Knowles patent shows the ordinary kerosene lamp, and it has a flat metallic wick tube. The patent is so old that it was taken out before the days of kerosene, and he refers to the use of tallow and other suitable material. The reason he put the flat metallic tube down into this tallow was so that it would melt the tallow. So for that reason he had to get the wick tube good and hot.



otherwise he would not get any flow of oil. So he built a heater around the upper end of the wick tube; and that heater, so far as we need to direct our attention to it, comprises the cap N, which is the cap that supports the glass chimney and ~~there~~ has a row of holes for the admission of air. The air comes in through the holes and thereby the flame gets enough air to make it combustible. The upper part of the cap N had a transverse slot through which the flame issued, and that gave the light. Now if we close up that slot in the top, perforated top of the cap N, and put some holes in the side of that same cap, we have substantially the structure of both defendants.

The Court:

You say that top N is perforated?

A. The top N is perforated.

The Court:

On the upper surface?

A. On the upper surface, directly on a line with the top of the wick. The slot for the light is directly above the wick. In this kerosene lamp, he had the heating element, and he had it for a very specific purpose, because he used tallow or other material which had to be heated or made quite warm in order to be fluid.

Another patent not referred to in the answer but illustrative of the prior art is that to Wenzel, No. 577,090, dated February 16, 1897. It is entitled—Safety Lamp. It says it is a safety lamp adapted for general use in a portable or stationary capacity. It describes it here for use as a pocket lamp or a night lamp. He has a reservoir or body 1. At the top of this reservoir he has a flanged wick holder, which wick holder extends through the flange. This brings the top of the wick practically in the center of an open slot which admits air all around to the flame, and this flame finds egress through the open top of the globe or shade 5. Here again we have a structure where the heat from the globe or shade 5 would be transmitted down and through the feet which support it and into the ring 4 surrounding the wick holder and into the wick; and, again, if we close up the upper opening of the globe 5 and put some openings in the side wall of 5, we have the structure of the two defendants.

These types of lamps I have just described were not used, so far as I can find out, to any extent in the open; they were as a rule used with glass shades and were de-

veloped primarily for use inside, where they would not be subjected to drafts. It gradually became the custom to use for outside lighting purposes torches like defendants' Exhibit B, which is the ordinary old style railroad torch, having a projecting wick tube and an open wick and a body filled with oil. That type slightly modified into the so-called bomb type, which meant merely leaving off the handle and putting the wick in the center, and in my opinion became the standard form of so-called construction torch in use for many years. Such a torch is shown in the McKloskey patent, No. 1,610,301. A further torch of this type is shown in the patent to Nichols, No. 1,036,514.

Exhibit B is the general type of torch at one time used quite extensively in the railway inspection work. It was also used as a construction torch. Usually the construction torches did not have this laterally extending handle. They were more of the bomb type shown in the McCloskey patent, No. 1,610,301. The telephone companies and the water companies used torches of this general type when they opened trenches in the street and did other construction work. In connection with my own work in the telephone business, I used such torches on the elevated railroad in New York. At night we used the torches of the bomb type, having the round fluid container. The railroad company preferred the use of a torch of that kind to a lantern because it seems in the railroad business the use of an ordinary lantern, either white or red, denotes a railway signal, or might denote a railway signal, and the engineers would slow up if they saw a lantern on the structure. If they saw one of these torches, they knew then it was some construction work, and without the lantern signal they would go ahead. The only objection I ever heard raised to this type of torch was the fact that there was a fire hazard in the use of anything with an open flame. The woodwork there was saturated with oil and grease and was very inflammable.

I actually used torches of the bomb type with the reservoir, wick tube and wick extending from the wick tube for signals in connection with my own work in Brooklyn, New York in 1903. I was employed by the New York and New Jersey Telephone Company at Brooklyn, New York. I remember the date because I changed my job shortly thereafter. It is fixed definitely in my mind because I got married. The reason I happen to remember this particular torch matter is that I

had one of these torches alongside of me on the seat of a cable box. I stuck my elbow back into the torch without knowing it, and it burned me so bad I fell off the seat.

Mr. Owen:

If it will save any time, we will admit this type of torch has been in use a great many years; prior to 1903.

The Nichols patent, No. 1,036,504, exemplifies as a general type the torch of Exhibit B.

Mr. Freeman:

That is a state of the art patent.

I have a model that exemplifies the subject matter of the Wenzel patent, No. 577,090, defendants' Exhibit D.

The Wenzel patent has to do with a lamp and includes a lamp body 1, made of metal, together with a wick tube 6, positioned in the upper end of the body, which tube is connected with a horizontal or laterally-extending flange. Part of the wick tube projects up above the flange and part below it. Within this wick tube is the wick 11. Positioned above the body and in close proximity thereto is a globe or shade 5, open at its upper end and closely surrounds the upper part of the wick tube and the flame. The globe is supported on clips which project up above the body, so that there is an open space between the lower end of the globe or shade and the top of the chamber. The air entering within the shade through this open slot passes upwardly and out of the top, so that this shade in effect is an open-ended cap, the slot at the bottom permitting the air to enter so that the flame can get air and the burning flame is issuing from the top. The plate to which this wick tube 6 is secured really forms the lower part of the chamber or container around the upper part of the wick, so that there are openings above this plate through which air is admitted. In place of having the openings at the side of this globe, as is found in the Withrow and Close patent, Wenzel provides an open top, and when you open the top, the flame can escape; then you do not need the openings on the side.

This Wenzel patent has the main elements found in the Withrow and Close patent, that is the reservoir body and a wick tube positioned in the upper end of the body, with a wick therein, and the shade mounted on the upper end of the body and surrounding the upper end of the wick tube.



In the closing of the top as found in the Withrow patent, you have to put openings in the side; so we go to the prior art and find out about these caps. You select a cap here depending upon what you wanted to do with it.

You will find in the Blake patent, No. 453,335, a hydrocarbon burner, which has a cap, which he terms a shield C. This shield has a base, C', which is perforated to admit air freely into the shield from below, and its cylindrical wall is pierced by apertures C-2; and Blake says this

"The shield entirely encircles the burner tip and is closed at the top, and has the apertures c-2 which are radially in line with the apertures b-3 in the burner tip B. The apertures c-2, however, are very much larger than the orifices b-3."

I will say in parentheses there he is talking about a gas burner.

The Court:

What is the fuel here, gas?

A. Gas; the only part which particularly concerns us is the cap which has means for admitting air at the bottom, and orifices at the top through which the flame can find exit. We do not need the bottom closure on the cap because we have something here which will act just as well. But if I take this cap and put the flame-emitting orifices on the side and close the top, we have the device with a cap surrounding the wick tube and air ports at the bottom of the cap for admitting air, and holes in the side walls of the cap to emit the flame.

I am combining Blake and Wenzel.

Another cap patent is that to Kahn, No. 1,175,527. This patent is entitled "Hood for Flash Igniters" and is a type of hood or cap which came into extended commercial use. The patent shows a gas supply head, and the hood elements, which the patent says are designed to encase any type of head, comprise a spider 2 in the form of a circular disc, having a central aperture therein combined with a down-turned flange 2' for engagement with the head, and the upper portion or cap proper, 6', which has in it the perforations 7 and 8 for emitting the flame. That cap, comprised of two pieces, Figs. 2 and 3, if made as shown in the drawing, can, without change, be set on top of the gas supply head or the equivalent, which is the wick tube of Wenzel, to form the complete torch har-

ing the protecting cap or hood surrounding the burner flame.

The Court:

Just what was that device for? That was merely a lighting device?

A. The Kahn patent is used in gas stoves, where you have a continuously burning pilot light. You press a button and the amount of flow in the gas jet is increased, and flame jets forth as shown in Figure 1, and the other burners being turned on in the stove, it ignites them.

Another patent in this cap group is that to Heston, No. 270,587. It shows a vapor burner, by which he means a gas burner. The cap is shown at C and really comprises two members, one within the other, and one adjustably mounted relative to the other, with a row of top and bottom holes, the bottom holes being for air and the top holes being for the flame exit. By adjusting these caps relatively you could vary the position of the holes to meet various conditions of flame. In other words, this is an adjustable cap. That cap can be used on the Wenzel model in the same manner as the Blake and Kahn caps.

I have a cap here, Exhibit E, which I have made as an attachment to the burner, Exhibit D, which has a closed or imperforate top referred to in some of the claims of the patent in suit; but likewise the patents to Blake and Kahn and Heston all show caps with imperforate tops.

The torch, plaintiff's Exhibit 28, heretofore manufactured by the plaintiff company has an upwardly extending portion forming the upper end of the wick tube, extending vertically about one inch above the body of the torch. To merely lift off the cap C of the Blake patent and place it on this wick tube, you will then have a torch having about the upper end of the wick a cap having an imperforate top and having holes in it for admission of air to the interior of the cap and another set of holes through which the flame can find egress. You would have with this particular model, Exhibit 28, a torch that would be much nearer the defendants' structures than it would be to the Withrow patented disclosure; for in order to distinguish that patent from the prior art and from the structure that would result by combining this old torch with the old cap of Blake, it is necessary to say that the cap is mounted directly upon the body of the torch; for if you extend the wick tube

upwardly and then mount the cap on the wick tube, all you have is a combination of the old torch in Blake or a combination of Wenzel and Blake or a combination of certain other patents to which I will later refer and Blake, or Kahn or Heston.

The Wenzel model, defendants' Exhibit D, will serve excellently as a signal for a torch or flare for giving illumination. I have witnessed that model tested in comparison with plaintiff's and defendants' torches. It gives a good visible flame. I did not make any tests on it with a meter, but it would appear to the eye to be about the average of the three torches here, plaintiff's Exhibit 3-a, 3-b and 3-c. There was considerable wind blowing at the time during part of this test. This torch did not go out. We gave it a water test. It stood up about as well as some of the other torches tested. I would say it would be perfectly satisfactory under average working conditions in comparison with most of the torches now in use for the purpose of signaling.

This Exhibit D includes the metal cap.

The Court:

When you tested it, did it have on the open top metal cap or have the combination of one of these others?

A. Both, your Honor.

The Court:

Both worked the same?

A. Both worked excellently. The closed cap under some conditions would be preferable.

The Court:

That is the closed top?

A. The closed top.

Martine, No. 35,349, is a state of the art patent. Martine desired to secure greater efficiency of combustion and thus a better flame. He provided on the upper end of his wick tube B, which projects upwardly some distance from the reservoir A, a sheet metal tube-like device which is open at its bottom and top. This device or cap was secured to the wick holder B by a plurality of fingers, which project downwardly from the cap and are secured to the wick tube, and openings are provided in the side walls of the cap. So in Martine, we have a reservoir body, a flange to which the wick tube B is secured, and the upwardly extending wick tube of the Withrow patent, surrounding the upper end of the wick, and the wick tube is the guard referred to as the metal



tube C in the Martine patent, the equivalent of the cap referred to in Withrow. The purpose of the guard or cap C, so Martine says, is to give a better light, in that it becomes hot and assists in consuming gases which would otherwise escape by imperfect combustion.

The Court:

That is a kerosene lamp?

A. Kerosene is mentioned in the specifications. The tube C of Martine is referred to as extending above the top of the wick tube and surrounding the lower part of the flame. Martine discloses everything of the Withrow and Close patent, except the imperforate top on the cap. If you take this patent, Figure 1, and imagine that you have got a silver dollar and lay it across the top of the cap C so as to make the top wall of this cap imperforate, you then have substantially the structure shown in the Withrow patent. Martine in this respect is much closer to the defendants' device than is the defendants' device to the Withrow patent, but Martine is not as efficient so far as the heat transferred to the body of the torch is concerned; that is what Withrow did when he put the imperforate cap down directly in contact with the body of the torch.

I call attention to plaintiff's Exhibit 3-b, the Bolser torch, and will now proceed to remove from the wick tube of this torch the entire cap. Looking at the drawing in the Martine patent, it will be perfectly evident that we have before us in this Exhibit 3-b, the reservoir A of Martine plus the wick tube B and the cap which I have removed from the Bolser device may be the cap of Blake or Kahn or Heston; and that it mounts upon the wick tube and not upon the body of the torch. That is in my opinion a very important distinction to which I draw special attention.

There is a metallic connection from the guard to the wick tube B in the Martine patent. There would be some heat transfer by conduction from the guard to the wick tube, the degree being entirely a matter of choice; that is to say the degree of heat transferred. You could make these supporting legs A thick or thin and you could make the entire cap out of copper, thereby greatly increasing its conductivity as compared with iron; and you could do several other things, all of which are within the scope and experience of any one skilled in the art to do.

The patents to which I have been referring have to do with those without an imperforate cap or top. There

are a good many patents in the prior art, which provide burners with closed covers and wherein the flame is permitted to escape through side openings. In practically all good vapor burners, there is a closed top, and whenever you close the top, it follows that by necessity there must be flame exit openings somewhere else, and since flame and heat travel upwardly, these openings are usually made in the side wall of the cap near the top.

In addition to the Blake and Kahn and Heston patents to which I have previously referred, I call attention to the Reekie patent, No. 192,130. This shows a burner primarily designed for heating and using gasoline or the like. It has a wick tube A, and spaced apart from this wick is the burner proper, which consists of a circular member forming a chamber in communication with the wick, and having a row of perforations around the bottom for the inlet of air, and another set of perforations around the top of the chamber for the flame exit. Reekie says that sufficient heat being obtained to vaporize the fluid, gas issues into the chamber G, where it is ignited and finds an exit beneath the deflector, the deflector being the closed or imperforate top H of this chamber, the chamber member forming in reality an integral cap similar to the caps I have heretofore discussed. He says that the core, referring to the part that I have called a chamber with its air inlets and deflector acts very much like a blow pipe and produces an intense and quick heat, the purpose of this specific patent being to make a heater out of the burner. The Reekie device is of interest as showing one thing which is not altogether clear at first sight, and that is that the wick in most of these devices is merely a means of conveying fuel in the burner to a point at which you want to burn it. The Reekie device is arranged in a horizontal plane. That is instead of the supply of fuel being below the burner proper, it is at the side of the burner. In that respect, Reekie differs from the torches we have been discussing.

There are other patents, which show this imperforate top, such as the patent to Nelson, No. 1,077,364. If you remove the pressing iron illustrated in Figure 1 of the Reekie patent, the flame would be visible, and the nature and extent of this flame would be entirely dependent upon the proportions you gave the air and fuel holes. You could make this type of burner either as an illuminating burner or a heating burner, at will, and in

very many cases, burners of this identical description have been used for both lighting and heating. One case with which many of us are familiar is the ordinary hot dog stand at the circus, where they have a gasoline burner of this type hanging up on the side wall, and gives light, and when he gets an extraordinary rush of customers, he takes the same burner down off the nail and sticks it under a big pan of hot dogs. I have seen several of these gasoline burners of this type that work at the same time as heaters. It may be that by adjusting the gasoline feed, he can get more light when he needs light, and more heat and less light when he needs heat, because it is entirely a question of air adjustment or fuel adjustment or both.

A further illustration of the imperforate top feature is found in the Almond patent, No. 193,796, entitled "Vapor Burners for Heating Purposes." Almond provides a lamp reservoir, the body A. A wick tube is mounted within this body and projects upwardly therefrom. On the upper end of this wick tube is an enclosure member or cap. This cap has an imperforate top and is provided with flame exit openings and below the flame exit openings are air inlet openings. The draftsman making the patent attempted to describe the flame which circulates and surrounds the burner proper. There is also provided in the Almond patent an outer guard and supporting members for supporting the vessel or the like, which is adapted to be heated. This showing somewhat confuses the drawings, and it is not easy to visualize the burner per se. In order to clearly see the parts with the flame removed, I have made a drawing which is an enlarged photostat of Figure 1 of the Almond patent drawing.

The Court:

What makes you say that is a closed top?

A. It is completely closed, the top of the cap, if Your Honor please, I think you are looking at the outside top here. The outside extreme vertical top of the drawing is merely the outside shade, which has nothing to do with the burner proper. The draftsman tried to show the flame issuing from the burner proper, and then he put a shade outside of it full of little perforations.

The Court:

You claim this is the device right here.

A. That is the complete device. By removing the flame injecting parts and the outside guard, which has



nothing to do with the burner, we have left the burner proper, which includes the tube-like structure enclosed at both ends, and provides flame exit openings at the side walls and also air inlet openings. This burner of Almond includes an overhanging skirt which extends around the air inlet openings. As to the skirt, Almond differs from the Withrow and Close patent. The skirt is the bottom element here that goes around the piece with the holes in it. In the Withrow patent, the air enters the cap horizontally. In Almond, the air first goes upwardly between the downwardly depending skirt and the wall of the bottom perforated portion of the cap, and then goes in laterally. When the air finally gets into the cap in Almond, it goes in and reaches in the same manner and functions in exactly the same way as it does in Withrow; but it goes through a little different path to get there.

Almond also differs from the Withrow patent in providing the burner head spaced a distance above the body of the torch or lamp. In this respect, that is the mounting of the burner upon the upper end of the wick tube, spaced above the lamp body, it corresponds with defendants' structure here charged to infringe. The two differences in Almond and the Withrow and Close patent are in the overhanging skirt and the arrangement of the burner spaced high above the torch body.

I have here a burner, defendants' Exhibit G, made according to the Almond patent. I have mounted the burner on a torch body like the devices charged to infringe. I have burned this burner and I find from these tests, there is no substantial difference between the operation of this burner and the burners of the two defendants in suit. Your Honor will understand that the dimensions of the holes, whether they are large or small, is a matter of choice. There is no formula of which I am aware whereby the diameter of the air holes, the diameter of the flame holes, can be calculated. These practical men in this art evidently arrived at the size of the holes that they used, the volumetric capacity of the cap, by purely empirical methods. They tried out something. If it did not work, they made the holes a little larger or smaller and moved them about, and finally they got what they thought to be the best results for the average operating conditions. The average operating conditions in a device of this character are very hard to determine.

What would work very nicely under one set of conditions with one wick adjustment, with one given oil, might not operate satisfactorily at all under another set of conditions. So the size of the holes that they made in these caps is nothing that involved the question of discovery. The perforations in the caps of the Almond patent may be and probably are just as good for one certain class of use as the perforations in the Withrow patent that came along years afterwards.

This was substantially the state of the art when Withrow came into it. We had two general types of burners. In one, the burner head or cap was mounted directly on the body of the torch, and in the other, the burner cap and head was mounted on a neck, which extended upwardly and raised the whole burner head away from the body of the torch. And on these two general types of burners, you could use at will any kind of cap of your own selection, depending upon what you wanted to do, whether you wanted a heater or whether you wanted a burner to produce a flame, you could pick out a cap and put it on.

Referring to defendants' Exhibits H and I and to the references already made to the down-turned skirt on them, Exhibit H is merely the commercial burner head of the defendant Bolser, and this ring that has been placed over this burner head to cover up the lower row of holes is the skirt that I have been talking about in connection with the Almond patent; so that the air enters vertically into the annular space around the cap, and then goes in horizontally. Defendant's Exhibit I is also the Bolser cap with the skirt permanently soldered thereto, and a portion of the model being cut away to show how the air finds entrance to the interior of the cap. The skirt does not cover the openings in the sense that it closes them; it is spaced apart so that there is a free, open, annular space between the inner wall of the skirt and the outer wall of the cap, and the air holes open into this annular space.

The Almond patent, page 1, third from the last paragraph says in regard to the top of the burner being closed:

"The upper end of the tube H is closed by a hinged cap, I, which can be swung open by hand or by raising the plate f against it."

On the model, Exhibit G, the plate referred to is the extreme top of the complete cap hinged to be thrown back or put down at will, just like the lid of a box.

I now operate the hinged imperforate top of the cap on defendants' Exhibit Torch, Exhibit G. I actually burned oil in the defendants' torch, Exhibit G. It operates very nicely, burns very steadily, and apparently so far as the tests went, is equal in performance to the commercial torches of the defendants.

I operated defendants' flare with the down-turned skirt represented by defendants' Exhibits H and I.

Defendants' Exhibit J is the torch with the skirt or overhanging flange secured to the burner, referred to as having operated with the skirt or overhanging flange secured to the burner.

In connection with the burning of the torch, defendants' Exhibit J and comparison with the Almond model, defendants' Exhibit G, and with plaintiff's Exhibit 3-b, I observe practically no difference. The presence of the skirt over the air holes did not make any difference in the tests that I performed. The skirt might afford some protection in case of very high wind; but the advantages of it are doubtful and I see no particular reason why it should be used. Its presence, however, makes no difference. If anything, it might be slightly beneficial, but not enough to be commercially worth while.

As to my observations as to where the flame found exit in defendants' Exhibit G, defendants' Exhibit J, and plaintiff's Exhibit 3-b, if these torches are burned in absolutely still air, they get very hot. The interior of the cap becomes so filled with gas that the flames will and do extend out of the air holes, as well as the flame vent holes, and if that heat is continued long enough, and the torch has been filled full of oil, the oil will begin to come out of the wick tube and run down on the outside of the torch. How much heat it takes to bring the flame out of the bottom air holes, I do not know. How long you would have to burn the torch, I do not know. It would depend upon how tight the wick was packed and how much of it was exposed in the cap. There are so many variables that from an engineering standpoint, you cannot arrive at definite conclusions. You can not state definitely when a certain thing is going to happen with these torches, but if you let one of them get hot enough, the flame will come out both sets of the holes.



that is the lower row of holes termed the air holes, as well as the upper row of holes. It was my observation when burning plaintiff's torch, as exemplified by plaintiff's Exhibit 3-a, that the same condition applied. I found flame coming from the lower holes as well as the upper holes.

I have here the file wrapper of the Close and Withrow patent and find that there was an Office Action in the case, July 24, 1929, in which the Examiner cited Hathaway, No. 147,496, and rejected Claim 2 of this patent. The remaining claims in the case were allowed, the case having been filed with Claims 1 to 10 inclusive. This patent to Hathaway was the only patent cited by the Patent Office during the prosecution of this case. On September 9, 1929, the attorneys made an amendment. They amended Claims 1 and 2 and added Claims 11 to 14, and in this amendment the following appears:

"This action is believed to place the case in condition for allowance. At a recent oral interview with the primary examiner in charge of this application, proposal to amend Claim 2 as above and add Claims 11 to 14, was considered, for reasons stated above, to avoid Hathaway and other patents inspected during the conference, including" - - -

and then the attorney listed all the other patents which appear in the file wrapper. I don't know what went on in the oral interview referred to, but I do know that the patents that were brought into this case by this amendment were like the flowers that bloom in the spring. They have nothing to do with the case in comparison with the patents which I have previously discussed as relating to this art.

The Almond, Martine and Wenzel patents were not referred to by the Patent Office or by Counsel during the prosecution of the patent in suit.

I can not read Claim 1, which has been relied upon as against the Kari-Keen flare, but not as against the Palmer flare, on the Kari-Keen device, unless at the same time, I read it on the prior art patents. I will illustrate what I mean. We find in Claim 1

"a torch body having an opening at its upper end."

The torch body is nothing more than a reservoir adapted to contain fuel. In Almond, for example, there is a reservoir for a coal oil lamp, and I have mentioned many other patents in which reservoirs are shown. The reservoir of Almond is the same as the reservoir of defendant's device, so if this element just mentioned reads on defendants' device, it likewise reads on the prior art.

The torch body is referred to as having an opening in its upper end. Defendants' device does have an opening in its upper end, in the center. So has the Almond device and many other devices of the prior art, which I have referred to.

The next element of the claim is

"a wick-receiving tube extending into said opening."

If the wick-receiving tube of defendants' device actually extends into the opening, then also the wick-receiving tube of Almond extends into the opening. Both Almond and the defendants' device have wick receiving tubes, which are in communication with the opening, so that when a wick is mounted within the tube, a part of the wick may extend up above the wick tube, and part is within the oil inside of the bottom.

The claim further reads

"and a cap disposed on the outer side of said torch body to enclose the outer end of the wick."

As I have already stated, in defendants' commercial device, plaintiff's Exhibit 3-c, a cap is mounted on the wick tube; that is, it is entirely supported on the wick tube, and through the wick tube supported on the torch body; it is not actually connected to or mounted on the torch body.

I think it is important to consider just what is meant by the word "disposed". Webster says that "disposed" in its present tense means "to place". It is an intransitive verb; so that the phrase I have just quoted would read, if expressed in other language.

"a cap placed on the outer side of the torch body" and the only way that that element of the claim can be distinguished from the prior art, for example the Almond patent, in order to give validity to the claim, is to read it just that way,—that the cap is placed on and directly supported by the torch body,—and if given that

interpretation then the Exhibit 3-c does not have that element at all. If the term

"a cap disposed on the outer side of the torch body"

means or is interpreted to include mounting the cap on the wick tube,—and it must be so interpreted, in order to read on defendants' commercial device, Exhibit 3-c, then likewise we find in the Almond patent, a cap entirely supported on the wick tube or wick holder.

The claim further includes:

"said cap having an imperforate upper wall."

From an inspection of Almond, it will be noted that the upper wall of the burner cap is imperforate; it has no opening in it. The same thing is true of the defendants' device.

The claim further reads:

"lateral flame openings, and air openings below the flame openings."

This refers to two series of openings, one to admit air within the burner, and the other to permit the exit of flame. And in defendants' device, we have in the side wall of the cap, Exhibit 3-c two series of such openings, with the air openings below the flame openings. But likewise we have in the Almond patent in the vertical side walls of the cap, a series of air inlet openings, which are below larger openings formed in the side wall above; so that we have in Almond the same arrangement of elements that we have in the defendants' commercial device, Exhibit 3-c.

The only way that I can read Claim 1 upon defendants' device is to read the term

"a cap disposed on the outer side of said torch body"

to mean a cap disposed on the outer side of said torch body or on a wick tube mounted on the outer side of the torch body, and if I read the phrase to include the part just mentioned:

"on a wick tube mounted on the outer side of the torch body"

then we have a wick tube having a cap connected thereto in exactly the same manner as is found in defendants'



commercial device and also in the prior art. If you read Claim 1 to mean just what it says:

"a cap disposed on the outer side of said torch body"

and thus distinguish it from a device where a cap is mounted on a wick tube, in order to distinguish it from Almond, then the same distinction exists when attempting to read Claim 1 upon defendants' commercial device, and defendants do not infringe the claim. If I am to read Claim 1 on defendants' commercial device, I can not do so without also reading it on the Almond device, and I therefore cannot read Claim 1 on defendant's commercial structure, Exhibit 3-c, without also reading it on the prior art.

I do not find in defendants' structure:

"a cap disposed on the outer side of said torch body to enclose the outer end of the wick."

I take it this cap so disposed to enclose the outer end of the wick means cap 8 shown in the Withrow patent, for example, mounted on the top of the torch body 1, and serving to enclose the wick. Defendants' cap is disposed on the outer end of the wick tube above the torch body and not on the bottom. This is a different arrangement from that shown in the drawings of the patent in suit, and the claim can not be read to cover the different arrangements used by defendants without reading it directly upon the Almond patent and the other prior art to which I have referred, many of which patents show caps disposed on the outer end of the wick tube above the torch body.

As to Claim 2, which has been relied on against the commercial flare of Kari-Keen, Exhibit 3-c, and likewise against the Bolser flare, Exhibit 3-b, what I have said with respect to Claim 1 applies with equal force to Claim 2 as applied to the torches shown in Exhibits 2-b and 2-c. One of the elements of Claim 2 is:

"a flame guard for said wick mounted on the outer side of said torch body, said guard including a cap provided with an imperforate top wall and lateral flame openings adapted to emit a luminous flame, and air ports."

The drawings show this to be the guard 7, which we have heretofore referred to as the cap. This is not mounted

on the outside of the torch body 1; it is mounted upon the upwardly extending neck of the wick holder 6. Turning to Exhibit 2-a, which is Figure 3 of the patent in suit, this can be fairly read upon the claim, and the meaning of the term:

"a flame guard for said wick mounted on the outside of said torch body"

will immediately be apparent. In this Figure 3 of the patent, the guard 7 is shown screwed into a flange, which really forms part of the torch body; it at least is something not spaced apart therefrom; and this cap or flame guard 7 is directly in contact and heat relation with the flange 5 of the wick tube.

Now turning to Exhibits 2-b and 2-c, showing defendants' devices, it will be seen that the flame guard or cap 7 is not in contact with the body 1 of the torch, and is not in contact with the laterally-extending flange 5 of the wick tube, and is not in heat relation thereto, except to the extent that in any device made of metal, the various parts are in heat transfer relationship. In plaintiff's device, they had a definite reason for locating the cap where they did. In defendants' device, they also had a definite reason for locating the cap where they did. Claim 2 can not be read on either of the defendants' structures, because if you do, you read it squarely on the Almond patent.

Comparing Claim 11 with the defendants' torches, plaintiff's Exhibits 3-b and 3-c, one of the elements of Claim 11 is:

"a wick holder having a portion in contact with the wick and a supporting and heat receiving flange."

In the patent in suit, a structure is shown to which this language can be applied and mean something: as the wick holder 6 of the patent has a portion in contact with the wick and has a supporting and heat receiving flange 5. When we read "heat receiving", we naturally have not to find out where the flange receives the heat, and if we keep in mind that the means of the claim, which is the cap 7, gets very hot when the torch is in operation, it will be apparent that the heat from this hot cap will flow down to the flange 5, which is in heat receiving relation thereto, and which also supports the wick; and

that the heat is carried from the cap 7 across the flange and into the wick, vaporizing the oil.

Now let us turn to plaintiff's Exhibits 2-b and 2-c and look at the caps 7 shown therein. Immediately a wide distinction in respect to the heat transfer will be seen, for neither of the flanges 5 of defendants' structures are in heat receiving relation to the cap 7. The caps 7 of the defendants are mounted on the top of the wick tube, and the wick tube right at the top receives the heat from these caps. The flange 5 in the defendants' structure works exactly backwards from the flange 5 in plaintiff's structure and patent. In the plaintiff's structure and patent, the heat flows in from the outside of the flange to the wick. In defendants' structures, if the heat flows anywhere through this flange, it flows outwardly from the wick through the flange to the body of the torch and to the oil therein. The direction of heat flow in defendants' devices is exactly opposite, if any heat flow takes place, to the path of the heat flow in the plaintiff's device and patent, and the flange 5 in defendant's structures is not in heat-receiving relationship to the cap 7, except inasmuch as all parts of a metal structure are in one way or another in heat transfer relationship to each other.

The heat flow relationship of both defendants' commercial torches compares identically with the heat transfer relationship of the Almond patent, No. 193,796.

As to Claim 5, unless you read:

"means to hold the wick in place"

as referring to holding it in the opening in the torch body, it reads directly on Almond. You must also in connection with that element of the claim, read the cap as fitting over the wick holder, and that means to hold the wick in place, serving as a complete enclosure for the wick, except only for the side flame and air holes. If you read the claim without regard to the patent drawings of Withrow, then you read it on Almond, and this defendants' commercial device does not infringe.

I have attempted to read all of the claims of the patent in suit on the torches made by the defendants, and am unable to do so without encountering the prior art. If the claims are read so that they read on the defendants' structure, then they also read on the prior art.



## CROSS EXAMINATION

By Mr. Owen:

Q. Did you make any independent search for patent references in connection with this case? A. I did.

Q. Where did you make that? A. In my office and in the Public Library in the City of New York, which has a complete file of all United States patents.

Q. Before you made that search you had all of the references submitted to you that were cited in the answer? A. I did not.

Q. You made an independent search and then had those references submitted later? A. I had some of them and some of them I did not have until after my search had been completed.

Q. When did you make your search? A. I think it was in March.

Q. Of this year. A. Yes sir.

Q. How long have you known of these patents which you have brought in as representative of the state of the art? A. Not prior to February of this year.

Q. You knew them at the time? A. Some of them.

Q. When did you know of the last of them? A. I would have to look up my correspondence from counsel.

Q. Several weeks ago? A. I don't think it was longer than three to four weeks ago. I would have to refresh my memory. I can do so if you wish.

Q. It was three or four weeks at least? A. I think so.

Q. Were the patents you brought in as representing the state of the art those discovered by you in your search? A. They were not.

Q. They were submitted to you by counsel? A. Yes sir.

Q. You did not discover any additional patents that you have referred to? A. Nothing as pertinent as the art here discussed.

Q. You have recited your own experience in using torches such as Defendants' Exhibit B? A. I have.

Q. And you actually used those? A. I did.

Q. How long ago did you first know of such torches being in use? A. About 1903.

Q. How long ago did you first know of torches similar to Plaintiff's Exhibit No. 28 being in use? A. You

mean as to the general type or as to that particular physical structure? A. As to the general type?

A. I would say 1912 or 1913; sometime before the world war.

Q. Were they extensively used at that time? A. I don't know. I used them. They were a common article of commerce because I bought them and used them at that time.

Q. And where did you use them, under what circumstances? A. Installing machinery and doing work of that kind. We wanted torches to run with by night instead of running the electric light plant; we bought some of these. I recall buying six of them; not this structure, but this exposed torch.

Q. That was used inside the building? A. Inside and outside also. This torch, I might interject, is substantially the old campaign torch of the election day parade. They had a pole a man carried in his hand or over his shoulder, and the body of the torch was swung in a yoke so that the torch would hang this way regardless of the position of the pole. I can remember that torch being used extensively outside in such parades and by circuses, for a period extending back to Benjamin Harrison's election, whenever that was.

Q. I understood you to give four classes of these torches or flares or whatever you might call them. The first class you gave was oil lamps with wicks? A. That could be one class.

Q. Do you recall the four classes you gave? A. I said I thought you could divide the class of burners up into classifications, and that an oil lamp having a wick would exemplify one type. That has a chimney. And you have an open wick torch of this type, Defendants' Exhibit B. We have the vapor torch, which has no wick. Then you have the combination of both the vapor and wick type, which is exemplified by the model of the Almond Patent, Defendants' Exhibit C.

Q. Do you know of any other illustrations in the art of this combination vapor and wick type? A. I think there are some shown in these patents that we have discussed (refers to book); if not, I shall refer to other patents which show them. The patent to Warner, 89, 297, shows a vapor lamp employing a wick; a downwardly extending tube 11, was filled with a substantially round wick 12. That wick conducts the liquid fuel to the

LCB

top of the burner, which top has an upper end provided with two beads or enlargements 13 and 14. In these beads jet perforations 15 are formed. The top of this cap, as shown in 16, is imperforate. That is a type of burner which is a vapor burner employing a wick.

Q. Do you understand that the wick 12 does anything more than convey the oil up into the vaporizing chamber in this Warner structure? A. That is all; and my understanding is that is all any wick does unless you burn the wick.

Q. You do not understand that this wick 12 is burned, do you, or lighted; that is, the flame is not lighted at the wick 12? A. No, sir.

Q. Do you know of any other instance in the prior art where the wick which conveys the fuel to the vaporizing chamber is lighted so that the flame burns from the wick? A. Yes, the patent to Almond, 193,796.

Q. That is the one you referred to? A. Yes; and the patent to Billingham, 181,030; the patent to Heath, 66,021; patent to Martine, 35,349. Martine says that the cap C retains the heat and assists in consuming the smoke and gases.

Q. That reference is what? A. 35,349.

Q. That is one of your state of the art references?

A. Yes sir.

Q. This patent to Martine does not show any vapor escaping through the holes and ignited at that point, does it? A. Ignited outside the holes?

Q. Yes? A. It would depend upon the conditions under which the lamp was burning.

Q. I am asking you what the patent shows? A. The patent does not show any vapor anywhere.

Q. The patent shows a flame extending directly up?

A. It does.

Q. It does not show any flame on the outside of the shield C? A. It does not.

Q. The patent to Heath does not show the flame?

A. Will you give me the number of that patent?

Q. 66,021? A. It does not. The patent says that the wick tube j has a wick introduced in the ordinary manner.

Q. And that patent does not state that there is any escape of gas from the openings in the tube, does it, where it would be ignited? A. It does not; but any one who has seen these lighting torches in operation knows



that the flame does escape, and that it is visible: I have seen such torches and I know a visible flame escaped from the side holes in the torch.

Q. Where did you see that torch? A. I Wilmington, Delaware; and the City of Philadelphia, Pennsylvania.

Q. Was that constructed in accordance with the Heath Patent? A. I don't know. It was that general type of torch used by all lamp lighters of that period.

Q. Did you ever see the torch of the Billingham patent in operation? A. I have seen torches of this general description in operation, but whether they had all the features disclosed in the Billingham Patent or not I am unable to state. All of these torches had as a rule an air inlet below the flame or wick and the flame exit holes in the casing at some point in the cap above the wick. The Billingham Patent says on the second page thereof:

"To light a street lamp: The cock of the same having been opened to allow of the supply of gas to the burner, the openings or perforations h are brought into proximity with the burner, and the flame, issuing through these perforations h, and deflected by the disk of metal i, lights or ignites the gas. As previously stated, air is supplied to the lighted wick through the perforations d, and combustion is thus maintained."

Q. Did you make any effort to secure one of these Billingham Torches? A. I tried to secure a street-lighting torch, but I was unable to do so.

Q. With whom did you communicate in that connection? A. I sent a man down to the New York Gas Company. He was unable to locate any of the torches.

Q. You did not get in touch with the owners of the Billingham Patent? A. I did not.

Q. Of all the patents that you have considered in this connection, which would you select as the one which most closely approximates that of the structure of the patent in suit? A. If you refer to the Withrow Patent as showing a cap mounted on the body of the torch, I would say we have no patent in the record that shows that feature. If you refer to the Withrow patent as showing a burner head carried on a torch body, in the manner exemplified by defendants' exhibits, or, rather defendants' structures, that are alleged to infringe, then

I would say you have almost a photographic copy of these structures in the Almond Patent of record.

Q. In referring to this Almond Patent, did you construct a device in accordance with the drawings of that patent? A. I have had one constructed.

Q. Is it here? A. It is Defendants' Exhibit G, with the necessary changes in the flange to adapt it to the torch body.

Q. You state that that Exhibit G is your best effort to reproduce the construction of the Almond Patent?

A. Within the limits necessary for a model for the purposes of this suit.

Q. Is this the only one you constructed? A. There is another model, which I now produce, which is Defendants' Exhibit J.

The Court:

That is on the Almond Patent?

A. That is defendants' torch with the skirt of the Almond Patent. The burner head is substantially the Almond burner head.

The Court:

What is that, Defendants' Exhibit what?

Mr. Owen:

Defendants' Exhibit J; and the other one was Defendants' Exhibit G.

Q. Then you made no attempt to reconstruct the Almond device for the purposes for which the Almond Patent disclosed? A. No. I did not want a heating burner; I wanted a lighting burner.

Q. In this Almond Patent, would it be possible to remove the burner, such as you have done in this folded illustration of the Almond device—what Exhibit is that?

The Court:

Defendants' Exhibit F.

Q. —would it be possible to construct that lower part of that burner, which is shown below the fold, without tearing the device apart? A. Surely. It is within the ordinary skill of a mechanic to put in a bushing, thread it and screw it into the body.

Q. In the Almond Patent, does not the shield G—is it not described as secured to the part or block marked E? A. It is; but that has nothing to do with supporting the wick tube.

Q. Is not that shield G also described as being secured to the flange g of the head or burner portion? A. Yes, sir.

Q. So that in operation as Almond intended this apparatus to be used, this part G, that shield G, was not removable? A. I don't know whether he intended it to be so or not, but it is. It performs no function whatever in supporting the wick tube or burner head. Whether you use it or not is a matter of choice depending upon what you want to use the lamp for.

Q. Is there anything in the Almond Patent which suggests the possibility of removing that shield G and still have an operating structure? A. I think not. I should not think the patentee would have encumbered the patent with it.

Q. Now, Mr. Van Deventer, if you will answer my questions, we will get along much better. A. There is nothing in the patent.

Q. The patent states in the paragraph immediately preceding the claims:

"Experience has shown me that without the tube G the degree of combustion and good heating-flame will not be obtained."

The Court:

Where are you reading from?

Mr. Owen:

From the Almond Patent, the paragraph immediately preceding the claims, on page 2.

Q. That is true, is it not? A. Yes, sir.

Q. And you have, in getting up your so-called representations of the Almond device, entirely omitted that tube G, have you not? A. I have because I wanted an imperfect combustion, that is to say, less perfect combustion than would be obtained perhaps with the shield G.

Q. That is, you wanted to produce a result that Almond had not contemplated? A. I don't know what he contemplated.

Q. Reading his patent, I am asking you whether you wanted to produce a result other than that contemplated by the description given in his patent? A. There is no description of luminosity with respect to this vapor burner; but I never saw any flame that did not possess some degree of luminosity, the amount of luminosity in a burner of this type being dependent upon the relative adjustment of the air and the fuel.

Q. Is there any means of adjustment of air and fuel in this Almond Patent, as illustrated in the patent



drawings or as described in the specifications, to indicate that there can be any regulation or adjustment of air and fuel? A. Certainly. He moves his wick up and down, the same as defendants and plaintiff here do in their torches.

Q. That is the only adjustment? A. That is all.

Q. He cannot regulate the size of the openings?

A. He fixes those for the best general average working conditions, as all manufacturers do.

Q. And the manufacturers fix those dimensions so as to obtain the results desired, do they not? A. Yes.

Q. You never tried this Almond device made up in accordance with the patent drawings, did you, completely? A. No sir.

Q. You never attempted to try them that way? A. No sir.

Q. Did you prepare the drawings from which Exhibits G and J were made? A. I did not. I checked them and approved them.

Q. Who prepared the drawings? A. I don't know.

Q. How did they come into your hands? A. They were handed me by counsel.

Q. Then you do not know who made them or who determined the dimensions, the size of the holes and otherwise? A. I requested counsel to have them made and told counsel what I wanted, and I believe that these were made in the factory of one of the defendants, but which one I do not know.

Q. In telling counsel what you wanted made according to Almond, did you give them dimensions or tell them what results you wanted to obtain? A. I told them I wanted them to make me a burner head embodying an imperforate cap, a cap with an imperforate top as shown in the Almond Patent, and with flame openings in the side walls, and with air openings below the skirt.

Q. Did you say anything about the relative sizes of the openings? A. I did not because that was a matter of common knowledge in the art.

Q. That is, you wanted them to produce from the showing of the Almond Patent a structure that would perform in an entirely different manner than that disclosed in the Almond Patent; is that true? A. No sir.

Q. It is not true? A. No sir.

Q. Then what did you want them to produce? A. I wanted them to take the Almond structure, the physical structure embodying a wick tube and cap having an imperforate top, and, by the exercise of the knowledge which is common in this art, to produce a lighting burner instead of a vapor burner, which merely meant a difference in the change in the size of the holes in the side wall of the cap.

Q. Those instructions were given to the defendants in these cases? A. They were given to counsel.

Q. And the knowledge of the art which you expected them to exercise was the knowledge at the time they constructed this burner, was it not? A. All they had to do was look at the Almond Patent and make a Chinese copy of it, and then make some holes of the proper size in the side of the cap. All of the knowledge they had as between the date of the Almond Patent in 1877 and the present moment was the size of the holes shown in the Almond Patent.

Q. You left that to their judgment? A. Naturally.

Q. Did you try these Almond devices yourself? A. I did.

Q. You do not know how the Almond device would operate if made in accordance with the Almond Patent, do you? A. Do you want a conclusion or matter of knowledge?

Q. I want your knowledge? A. I have no knowledge of it as a vapor burner. I believe it will operate very nicely.

Q. You do not know how it would operate even with the shield G removed, if the remaining portion were made in exact accordance with the Almond Patent, do you? A. No sir.

Q. If it were made in exact accordance with the Almond Patent, with the shield G removed, the size of the openings otherwise being followed, you would expect it to operate as described in the Almond Patent? A. I would expect it to have much more visibility than you would want for a vapor burner.

Q. Would you expect there would be a small flame at the upper end of the wick and a larger flame outside the cap? A. With the shield G removed.

Q. Yes. A. Yes, the flame would come out of the upper row of holes.

Q. And the same would be true with the shield G there? A. No, I don't think that, with added metal about the torch, you would get very much flame issuing out of the holes because by reason of the presence of the shield G, the space between the cap and the shield G would be filled with gas, if anything, rather than air, to the point where there would be very little luminosity left. The flame, if it went anywhere, would probably go upwards in the general direction that the draftsman has attempted to indicate on Fig. 1 of the patent.

Q. You say if the shield G were removed, you would expect to have flames such as are shown in the drawings of the patent? A. They would go out more, farther to the side, and would be quite visible.

Q. They would be blue, would they not? A. No, the tips of them would be yellow; I mean by that visible, and whether or not they were blue or had a gaseous crater would depend upon the temperature of the cap, how high the wick was, how high the oil was, and the temperature of the air.

Q. The desire of any one constructing a burner for heating purposes is to get a blue flame? A. Yes sir.

Q. The nearer they can get to that, the better the burner? A. Yes sir.

Q. With the shield G removed, how would that flame be? A. If the burner were otherwise constructed just as it is in Almond, I have just described what I believe would take place with the shield G removed. You would not have any chimney effect there about the flame, and the part G would act as a baffle plate, and the burner is hotter with the shield than without. I might compare this to the ordinary kerosene lamp. If you take the chimney off of it you have a flare. If you put the chimney back on it, you feed air into it and break the current of air and you get better light because that chimney is transparent. That is an opaque chimney; when he puts it on he gets better combustion. When he takes it off he gets less combustion.

Q. Then as I understand you, you would expect, if the shield G were removed from the Almond device, you would not get as good a flame for heating purposes as with the shield present? A. You have a torch like the defendants' torch if you take the shield off. If you put the shield on you would have the same thing you would have here if you took a tomato can and put it over the



top of this; you would make an outside chimney which would concentrate the heat and give you a better burner.

Q. In both of those situations, that is, with the shield on as shown in the patent, and with the shield off as you have done in your models, but the device being otherwise the same as shown in the patent drawing, would you expect to have the two separate flames, the one on the inside and the other on the outside? A. You mean a flame within the cap and a flame without the cap?

Q. As shown in the drawing? A. That would depend entirely upon the conditions under which the burner was operated. At one time you might have flame in both places; another time you might only have it on the outside; another time you might only have it on the inside.

Q. With the shield removed, if you had any flame on the inside, it would be a very small one, would it not?

A. Well, it might be very large; it might fill almost the interior of the cap; I couldn't tell you unless I knew the height of the wick, and whether it was in still air or in moving air; how hot the torch was.

Q. If it were operated as described in the patent, it would be a very small flame on the inside, would it not? A. If operated as a vapor burner?

Q. If operated as a vapor burner, as described in the patent? A. Yes. You want maximum heat and minimum light.

Q. The Almond Patent states, beginning with the last paragraph of the first page:

"In use the flame is started by igniting the upper end of the wick and then closing the cap upon the tube H. The wick-flame burns then in a chamber, H, to which a small proportion of air is admitted through the rim b or plate F, and from which gases can freely escape through the comparatively large holes in the tube H. In other words the flame is reduced to the bare possibility of existence, but not entirely stifled."

Q. That refers to the flame at the end of the wick, does it not? A. Almond is there referring to the flame at the end of the wick within the cap, and is aiming to produce a maximum amount of heat with minimum amount of flame at that point because he does not want to soot up the inside of the burner. Now, having created

as much heat as he can in getting the cap as hot as possible, he says on the second page of the patent:

"The vapors thus created, or other combustible gases, escape through the holes of the tube H into the annular space formed between said tube H and the tube G. In this space the vapors or gases meet a supply of fresh air which reaches them through the apertures of the tube G, and, when ignited, produce a perfect heating flame," . . .

The visible flame in this torch at all times, as I see it, would be that flame which extends out from the outside of the cap and the holes, and the height of the wick and the other various factors which go to make up that flame are so proportioned to each other; that the flame is luminous if you want a light, and it is as nearly blue as you can get it if you want heat.

Q. It does not say anything about a luminous flame, does it? A. It does not have to.

Q. It does not say anything about wanting light; that is something you introduced; this wick is round, hollow wick, is it not? A. Yes sir.

Q. Down inside that hollow wick extends the lower arm of this T-shaped member marked f, I believe; that is true, is it not? A. That member f as shown in section in Figure 1 is probably circular and shaped like a collar button. It is merely for the purpose of further conducting heat up into the imperforate cap.

Q. The lower part of that T-shaped member f is within the walls of the circular wick? A. That is right.

Q. In your models G and J, the openings in the part marked H are relatively much larger in proportion to the size of the part H than shown in the drawing of the patent; is that not true? A. Yes sir.

Q. With the holes in the part H of the size which they appear in these two exhibits G and J, would you expect to have the device operate in the same manner as that described in the patent, that is, with a small flame at the upper end of the wick and a larger flame enveloping the part marked H? A. That is what happens.

Q. You find two separate flames, one on the inside of the wick and the other on the outside? A. We assume that the flames are separate. We have no way of telling that except that at times you can see extending from one of the flame holes a plume of flame. It is ap-

perently not connected up with the flame in the burner, but is lit by reason of the gas extending from the hole.

Q. Supposing those torches were placed out in the air, where there was considerable air stirring, would you expect to have two separate flames, one on the inside and another on the outside? A. It would depend upon whether I was on the leeward or windward side. If I was on the leeward side of the torch and the wind was blowing, if there was a hole at that point it is quite possible that the gas flame could ignite up almost to the cap; it might be spaced away from the cap one-sixteenth of an inch.

Q. By the gas flame, what do you mean, the flame from the wick or the other flame? A. From the outside.

Q. You mean from the outside the flame might come in and connect up with the flame from the wick?

A. It might jump back and forth continuously.

Q. So that there might be a single flame if the holes in the part H were large enough? A. At times it would be single and at times double.

Q. There is nothing described in the drawing or specification of the Almond Patent that contemplates any such result, is there? A. No. It is common to all vapor burners.

Q. I will appreciate it, Mr. Van Deventer, if you will answer my questions and not add your arguments. In this device the Almond patent describes the part marked E as being a wooden or other bad heat conducting base block; that would indicate that he wishes to avoid any transfer of heat from the burner down to the fuel holder, would it not? A. He says a bad heat-conducting base; and I assume what you state is a fact, he does not want the bottom of the torch to get so hot you cannot pick it up.

Q. And he further states that this wood block E, together with the tube D, is by preference covered with asbestos paper or other non-combustible substance. That protection of asbestos paper further indicates that he wants to avoid any transfer of heat from the burner down to the base, does it not? A. Yes, sir.

Q. Will you point out to the court just what the part D is, referred to in that quotation; the tube D, it is very indistinct on the drawing? Is it the part that immediately surrounds the wick tube and extends upward?



ly from the block E? A. The part D is a hollow, exteriorly-threaded flange which supports the burner proper and is screwed into the body A forming the fuel receptacle.

Q. It is that supporting member or supporting tube D that is covered with asbestos? A. I take it the bottom side of it is. I don't see how the parts that screw into the torch A can be so covered. This flange D has an inwardly-extending end which is in metallic contact with the wick tube or comes very near to it. I take it that the asbestos paper covers the bottom of the wooden block E and perhaps the lateral flange of D which is secured thereto.

Q. You mean that the flange is right on top of the wooden block? A. That is right.

Q. That flange is not referred to as the tube D, is it, in the specification? A. I have been talking about the tubular guideway D. He said: "A wooden or other bad heat-conducting base-block, E, is rigidly affixed to the tubular guideway D,"—a flange.

Q. That is tubular? A. Yes, that is tubular, and the wick tube extends down through the middle of it.

Q. And it is that tube D that is covered with asbestos paper? A. The neck of it; the portion of it that is screwed into the lamp body could not be.

Q. But the exposed portion of it? A. The exposed portion of it is covered with asbestos paper.

Q. Is there any other patent among those to which you have referred, or among those in the volume that has been filed by the defendants, which in your opinion approaches the structure of the patent in suit as closely as does the Almond Patent which we have been considering? A. Not in the physical appearance of the structures.

Q. You have selected that as the best reference against the patent in suit? A. You mean from the standpoint of physical appearance or the standpoint of patentability.

Q. Standpoint of patentability, I would say? A. I think there are other patents equally as pertinent; the patent to Martine.

Q. You think Martine is as close to the patent in suit as is the Almond Patent? A. From the standpoint of patentability, yes.

Q. In this Martine Patent there is a wick tube which carries at its upper end a part which is described as a perforated tube of sheet metal, C. What do you understand the perforations in that tube C to be for?

A. To permit the flame to go out if you put something on top of the burner. This was a laboratory burner. It was customary to set, for example a metal dish on top of it. When you did that the flame had to have somewhere to go; so they put these perforations in it; also put those perforations to admit it so that when you use it as a straight burner, shown in Fig. 1, you would get the maximum combustion.

Q. Is there anything in the patent to support your statement that the flame was ever intended to pass out through the openings in the tube C?

A. No sir.

Q. That is your conjecture?

A. That is the common knowledge in the art.

Q. What other patent or patents do you select as approximating the disclosure of the patent in suit as closely as does Almond?

A. The patent to Wenzel, 577,090.

Q. That is one of the state of the art patents?

A. Yes sir.

Q. Of what material do you understand the part to be made?

A. I take it to be metal; it is sectioned for metal.

The Court:

You have an exhibit here which corresponds to the Wenzel Patent?

A. Yes sir.

The Court:

Which one is it?

A. Defendants' Exhibit D.

The Court:

Very well.

Q. And in that exhibit you have made that globe or shade of metal, have you not?

A. Yes sir.

Q. Are there any openings in that globe or shade except at the bottom and top?

A. No sir.

Q. The flame, if it projects high enough, or if it projects high enough to be visible, would pass out of the central opening at the top?

A. Yes sir.

Q. Do you think that this Wenzel construction would be of any use as a warning signal to be placed outdoors where it is exposed to wind and rain?

A. In the test I witnessed it made a very good one.

Q. That is, you tested this Exhibit D? A. Yes.

Q. You found it made a very good warning signal in what kind of weather? A. Well, it was rather cloudy. We poured some water on all exhibits during that test. It was fairly windy.

Q. Was this in the daytime or night time? A. Daytime.

Q. You thought it made a good warning signal in the daytime? A. I found it looked like all of the rest of them.

Q. Could you see the flame at all? A. Surely.

Q. The flame did project higher than shown in the Wenzel Patent, did it? A. Yes sir.

Q. Do you have any idea how much wind velocity there was on that day? A. No, I would not want to venture a guess.

Q. It was not a perfectly still day? A. No, it was fairly windy.

Q. Can you select any other of these prior art patents which you consider approaches the disclosure of the patent in suit as closely as does the Almond patent? A. The Billingham Patent, 181,030, strongly suggests the elements of the patent in suit.

Q. You have already stated you never tried out a structure made in accordance with the Billingham Patent?

The Court:

He said he could not find any. He sent a man down to some gas company.

Q. Yes; did you make one in accordance with the Billingham Patent? A. I did not.

Q. Did you give instructions to have one made? A. I did not.

Q. Do you know whether one was made by either of the defendants in this case? A. I don't know.

Q. You never saw one? A. No sir.

Q. They never told you they had made one? A. No sir.

The Court:

Why did you not have one of those made the same as you did of Exhibit D?

A. I thought the others were the best references, Your Honor.



The Court:

I understood you to say this was just as close as the other references; that is the reason I am asking you the question. Apparently you do not think that.

A. We had to make a choice somewhere as to where we would stop in making models, and we picked out the others;

The Court:

You made one of Wenzel, and I wondered why you did not make one of Billingham, if Billingham were just as close.

Q. Have all of the models which were made been produced and offered in evidence, that is, made representative of the prior art as you interpreted it? A. All that I have seen are here submitted; all that I asked for.

Mr. Owen:

Before we leave this Almond Patent, I would like to have Your Honor notice the size of those flame openings and compare them with the size of the openings shown in the patent drawings.

The Court:

The patent in suit, you mean?

Mr. Owen:

No, the Almond patent.

The Court:

I have the Almond patent here. Where are the holes you are referring to here?

Mr. Owen:

In the Almond Patent?

The Court:

Yes.

Mr. Owen:

They apparently are not lettered. Right there is one of them.

The Court:

Under the H?

Mr. Owen:

Yes, under the H, under both sides. I would like to have you note the relative sizes of the holes in this Exhibit G, and Exhibit J, which the witness has produced as representing a part of the Almond structure after he has removed this shield G.

The Court:

I will put down here so that I will not forget it.

Compare holes of Exhibits G and J with the Almond Patent."

Q. Have you Exhibits 2-C and 2-B before you? A. I have.

Q. In your testimony this morning you stated that your understanding of the word, "disposed", or the words, "disposed on the outer sides of said torch body", in Claim 1, called for a mounting of the cap directly on the body; that is correct, is it not? A. Yes sir.

Q. Then you give that term, "disposed", the same meaning as the term, "mounted on"? A. A. Used in that way, yes.

Q. And you take the position that both terms, "mounted on" and "disposed on" require the mounting to take place immediately upon the torch body? A. It is necessary to so read the claim in view of the prior art.

Q. Just disregarding the prior art for a minute, would you say that it would be a fair use of language to refer to the cap portion 7 of the Bolser Torch as being mounted on the torch body 1? A. I would not so regard it.

Q. It is carried by the torch body 1, is it not? A. Yes sir.

Q. And the only reason you say it is not mounted on the torch body is because the wick tube is interposed between the torch body and the cap 7; that is right, is it not? A. That is right; mounted on the wick tube, and not on the body.

Q. In other words, the wick tube is carried by the body and the cap is carried by the wick tube? A. That is correct.

Q. In the drawing of the patent in suit there is an intermediate part between the torch body and the cap 7, is there not? A. You mean a threaded flange?

Q. I mean the double threaded flange? A. I think that is part of the torch body.

Q. You call that part of the torch body? A. The torch body is not complete without it; that is the answer.

Q. Suppose that flange extended up; instead of being broader at the top than at the bottom, suppose it extended up in the form of a tube for one-half an inch; would you then say that the language of these claims would not apply to the structure? A. If you extended this unnumbered flange up?

Q. Yes? A. It would still be part of the torch body.

Q. Then it would be mounted on the torch body?  
A. If you mounted the cap 7 on it?

Q. Yes? A. It would.

Q. So that it is not a question of separation or distance between the cap and torch body, but it is the fact that the wick tube carries the cap in the defendants' structures, and the flange unnumbered element in the patent in suit carries the cap 7; it is for that reason you say that the cap is mounted on the torch body in the patent in suit, and not in the defendant's structure? A. That is right.

Q. Would you say that the wick tube of the Bolser Torch, Exhibit 2-B, is mounted on the torch body? A. The wick tube 6?

Q. Yes? A. Yes sir.

Q. Would you say that the wick tube 6 is the Kan Keen Torch, Exhibit 2-C, is mounted on the torch body? A. Yes sir.

Q. In both of these exhibits the cap is, in turn, mounted on the wick tube? A. Correct.

Q. And because the wick tube intervenes or is interposed between the cap and the torch body you say the cap is not mounted on the torch body? A. That is correct.

Q. There is nothing in the claim that requires the mounting of the cap to be directly on the torch body, is there? A. Claim 1 we are now speaking of?

Q. Yes; and in Claim 1 the term is "disposed on", but I understand you make no distinction between "mounted on" and "disposed on", so you may answer the question with regard to Claim 1?

Question read.

A. According to my interpretation of the word "disposed", it is necessary to place the cap on the torch body.

Q. Without anything intervening? A. That is correct.

Q. According to your interpretation of the words "Mounted on", in Claim 2, the same would be necessary? A. Yes sir.

Q. So that it is simply a question whether the language of those claims requires the mounting of the cap to be directly on the torch body? A. You are considering the claims merely from the standpoint of language, and not in view of the prior art?



Q. Considering now as language in the claims, yes?  
A. I would say that it was necessary, in respect to claim 2, to have the flame guard for the wick mounted on the outside of the torch body, that is to say, directly mounted on the torch body.

The Court:

As in Plaintiff's Exhibit 3-A?

A. Yes, Your Honor.

The Court:

If there is any departure from that, your notion is that there would be no infringement?

A. Yes, Your Honor.

The Court:

You believe that that is an essential element of the claims of the patent in suit?

A. Yes; that is Withrow's contribution to the art.

Q. Referring to Exhibit 2-B, you testified that there is no heat transference through the flange marked 5. I will ask you to consider the curved flange at the lower end of the cap, and state whether or not that would constitute a heat-transferring flange? A. Referring to the downward-extending neck on the cap 7?

Q. Yes? A. That transfers heat.

Q. And it transfers it to the wick tube and the wick? A. Yes sir.

Q. Referring to Exhibit 2-C, the same would be true of the flange at the lower portion of the cap 8? A. The two drawings and the two devices are identical in that respect.

Q. Then both of these structures have a wick holder 6 having a portion in contact with the wick and a supporting and heat-receiving flange, do they not? A. Please read the question.

Question read.

A. There is no heat-receiving flange in the Bolser and Kari-Keen devices; if you are referring to the flange 5.

Q. You are referring to the flange marked 5 in Exhibits 2-B and 2-C? A. Yes sir.

Q. Well, my question—I have called your attention to the flanges at the lower portion of the cap 7, and you have stated that they are heat-transferring flanges; and they transfer heat from the cap to the wick tube or wick holder, do they not? A. They do.

Q. With that in mind, is it not true that both of the defendants' structures have a wick holder which has a portion in contact with the wick, and that they also have a supporting and heat-receiving flange? A. The drawings that you show me, Exhibits 2-B and 2-C identify the heat-receiving flange as the flange 5 on the wick tube or wick holder. There is no part of the part 7, which is the cap, identified as a heat-receiving flange.

Q. I am asking you to disregard the lead line which leads to the numeral 15 and consider that lead line as extending from the flange at the lower part of the cap K; and with that understanding, will you answer the question? A. But that is not my understanding.

Q. That is what I am asking you to assume? A. These charts purport to apply claims of the patent to defendants' structures, and the heat-receiving flange in the patent you have identified with the numeral 5 on these drawings is the heat-receiving flange I have been talking about throughout my testimony. If we are going to switch and call something else a heat-receiving flange, my understanding of the whole situation may be somewhat different from what it has been.

Q. I am asking you to assume as you have stated that these flanges at the lower portion of the cap 7 are heat-transferring flanges. Is it possible for you to consider that as the element 5 and then answer this question? Do these structures as shown in Exhibits 2-b and 2-c have a wick holder which has a portion in contact with the wick? They have that, have they not? A. Yes, sir.

Q. And do they have a supporting and heat-receiving flange? A. As part of the wick holder, they have not.

Q. I am not asking you whether part of the wick holder or not. There is nothing in the language of the claim or in the language of my question that asks you to assume that. The claim simply says a supporting and heat-receiving flange. You state that the flange or flanges at the bottom portion of the cap 7 are heat-receiving flanges—

Mr. Bair:

May I ask which claim you are referring to, Mr. Owen?

Mr. Owen:

Claim 11.

A. On these charts that you handed me, Exhibits 2-B and 2-C, you have designated the supporting and heat-receiving flange with the numeral 5, and it forms, together with the wick holder 6, an element of the claim. I see no way you can now separate the heat-receiving flange from the wick tube and say that it is somewhere else.

Q. In other words you do not admit the possibility of having designated the wrong element as the heat-receiving flange in these drawings? A. The element 7, the cap, has a heat-receiving portion integral with, and which extends around and embraces the wick tube, and is in exchange relation with it; there is no question of that in my mind; but I cannot read claim 11 as including as an element of the claim a heat-receiving and supporting flange in any other place except that you have designated with the numerals 5 and 6.

Q. But nevertheless heat is transferred or conveyed from the cap 7 through the horizontal flange at the bottom to the wick-receiving tube or wick-holding tube, is it not? A. Certainly.

Q. Now, referring to Claim 12, the language there is, "Comprising a wick holder having a portion in contact with the wick and a lateral flange,"—now in the patent there is a lateral flange which is marked 5 in Exhibit 2-A, which does extend from and is an integral part of the wick holder; that is right, is it not? A. Yes sir.

Q. And in that drawing Exhibit 2-A, the cap extends upwardly from the outer edge of that flange; is that correct? A. Yes sir.

Q. In the drawing, Exhibit 2-B, the wick holder has an integral flange at the bottom, but there is connected with it at the top a flange which forms a part of the cap 7. Now if you consider that flanges as an integral with the wick holder, you would have no hesitation in admitting that the structure complies with this language of Claim 12, would you: "A burner for a construction torch adapted to emit a luminescent flame and comprising a wick holder having a portion in contact with the wick and a lateral flange",— A. So far, I go with you.

Q. And the lateral flange in that claim is for the purpose of transferring heat from the cap 7 to the wick holder, is it not? A. I am talking about the laterally-extending flange 5 on the wick holder.



Q. Yes; and I am asking you to assume that the lateral flange on the bottom of the cap 7 is formed integrally with the wick holder 6? A. That is another element entirely of the claim; the claim goes on to recite, "a wick holder having a portion in contact with the wick and a lateral flange,"—then as a separate element of the claim there is included, "a cap enclosing and spaced from the end of the wick and having an imperforate top and provision for lateral exit of flame and entrance of air, and the bottom of the cap being in heat conducting relation to said flange."

Q. Yes? A. The bottom of the cap in the drawings, Exhibits 2-B and 2-C, is not in heat conducting relation with the flange 5, in the sense that term is employed in the claims.

Q. Let me ask you to assume this: That instead of continuing the metal of the cap down to and including the in-turned flange, you consider that cap as stopping at the lower end of the vertical portion. Can you follow me there? A. Yes sir.

Q. Now if the separation were there instead of between the inner end of the flange and the wick holder, you would have identically the construction shown in the patent drawing, would you not? A. You would have a cap supported in midair, with nothing to support it, like Mohammed's coffin.

Q. No, you would have your cap supported on the outer end of the flange? A. When you say that you have the patent in suit.

Q. Then the only difference between the patent in suit and the defendants' structures, in the respect to which we are now referring, is that in the patent in suit the lower edge of the cap makes contact with a flange which extends outwardly from the wick tube, and in the defendants' structures that flange forms a part of the cap and extends from the cap inwardly where it contacts with the wick tube; is that not true? A. I do not consider the contracted bottom of the cap to be the equivalent of flange 5 extending from the wick tube.

Q. Would it make any difference in its function of transferring heat whether the break between the parts is at the point where the flange contacts with the wick tube or at the point where the flange contacts with the cap? A. Yes. The two structures, so far as the heat-

transfer is concerned, are exactly opposite each other. In the patent in suit the heat flows from the cap 7 into the unnumbered spud which is welded into the top of the receptacle 1, and across the flange 5 which is the supporting and heat-receiving flange of Claim 11, and thereby gets into the wick and vaporizes the oil. In both of the defendants' structures, taking Exhibit 2-B, the Bolser structure, the heat from the cap 7 is transferred directly to the top of the wick tube; and if any heat transfer does take place through the laterally-extending flange 5 of the wick tube, it is in the opposite direction from the heat transfer in the patent, and is merely an accidental thing and performs no particular function. It might in very cold weather tend to keep the oil down in the container 1 a little warmer; but the whole purpose of heat transfer in these devices is to keep the wick tube and wick and the oil in the tube hot.

Q. And defendants' structures both do that, do they not? A. They do.

Q. You persist in disregarding my request that you consider the flange at the lower end of the cap as the heat-transferring flange. You admit that that is the heat-transferring flange in both defendants' structures, do you not? A. It is in heat transfer relation to the top of the wick tube, but it is not the heat-transferring flange of the claims.

Q. We will leave that to the court. This flange at the lower end of the cap 7 is in heat transfer relation to the wick tube? A. Yes sir.

Q. In the defendants' structures? A. Yes sir.

Q. And in plaintiff's structure, that is, the structure of the patent in suit, it is not? A. No. In the patent in suit the cap 7 is in heat transfer relation to a flange, and heat passes across the flange 5 and into the wick tube.

Q. That flange is formed integrally with the wick tube? A. Correct.

Would it make any difference in the operation of this device if that flange were formed integrally with the cap 7 instead of being formed integrally with the wick tube 6? A. Yes sir.

Q. It would operate differently? A. Yes sir.

Q. Are you still going back to the flanges which extend upwardly from the wick tube in Exhibits 2 and 3?

A. The operation of the defendants' device in some respects is superior to that of the plaintiff, in that the heat transfer from the cap 7 to the top of the tube, top of the wick tube 6, is direct; that is, under certain conditions of operation the defendants' structure may be superior. Under other certain conditions of operation the plaintiff's structure may be superior. In the plaintiff's structure the heat from the cap 7 is transferred directly to the body of the torch, and the heating effect on the body of the torch and the oil contained therein is somewhat greater with the plaintiff's device than with the defendants'. Now under operating conditions where that condition is beneficial the operation is different than it would be with the defendants' device; the operation is not the same.

Q. I doubt if I can get you to admit it but I am going to try once more. Will you look at Exhibit 2-A? Now can you conceive of the lower part of the flange marked 5, which extends from the lower end of the cap over to the wick tube; can you conceive of that being formed integrally with the cap? A. Yes sir.

Q. And can you also conceive of the possibility of forming the upper one of those two flanges, the one that is connected with the upper half of the wick tube 6, as remaining as a part of the wick tube? A. Yes sir.

Q. If that construction were made, is it not true that you would have the same transfer of heat from the cap through the flange to the wick tube? A. You would have the device of the Almond Patent.

Q. I am not asking you that. I wish you would answer my questions. We can get along and save a lot of time. A. You would have a cap mounted on the wick tube, and what would hold the wick tube in place if you moved the two flanges up and formed the bottom of the cap?

Q. If you followed my question you would have seen what would hold the wick tube in place. I will state it again. I ask you to assume that the flange which is marked 5 in Exhibit 2-A, and which projects outwardly from the lower half of the wick tube, is made integrally with the cap instead of with the wick tube; then I am asking you to assume that the wick tube is continuous, and has this outwardly-extending flange which is the upper half of the part marked 5 in Exhibit 2-A. Now is



here any reason why that would not form a perfectly operable structure? A. What supports the wick tube in the torch?

Q. The upper flange rests on the lower flange; that's what I have been trying to say? A. But you said you were going to move 5 up to the bottom of the cap. I am trying to answer the question. I don't think I understand it.

Q. I must be dumb in asking you the question then. This wick tube in Exhibit 2-A is formed of two sections, each of which has an outwardly-extending flange, has it not? A. Yes sir.

Q. Now I am asking you to assume that that lower flange, instead of projecting outwardly from the wick tube, projects inwardly from the bottom of the cap 7, and supports the wick tube through the upper flange, which will still be a part of the wick tube. Would that be a practical construction? A. Does the cap 7 still continue down and go into the threaded spud or cut the spud off?

Q. Yes, it can go down into the threaded spud, just as it is here? A. That would change the interior air space in the cap.

Q. I am asking that the dimensions be retained; I am not asking you to change the dimensions at all? A. I don't know whether it would be practical or not.

Q. But if it were built in that way, there would be a heat transfer from the cap through the flange to the wick tube? A. Yes sir.

Q. I want to return for a moment to the Almond device. The devices you identified as the Almond Patent, being Exhibits G and J; on how many different days did you test those devices? A. One.

Q. And for how long a time did you test them? A. I should say an hour.

Q. Where did that test take place? A. In the City of Toledo.

Q. What location? A. I couldn't tell you that; somewhere near the hotel down here, in a garage lot.

Q. It was on the ground in a lot? A. Yes sir.

Q. Surrounded by buildings? A. Yes; we were in a pretty drafty place.

Q. What day was that? A. Last Tuesday.

Q. This week, Tuesday? A. Yes sir.

Q. This Exhibit M was offered in connection with your direct testimony, although you were not examined regarding it. Do you know anything about it? A. No, never seen it before.

Q. Have you ever seen a construction which was made in exact accordance with the sectional drawings or figures at the left of the inside page? A. No sir.

Q. Did you have anything to do with the making of drawings, Exhibits K and L? A. No sir.

Q. You never saw them before to-day? A. I think I saw them Monday night when I arrived here.

Mr. Freeman:

We have no redirect; except if it is agreeable to the court and convenient, we are perfectly willing to-morrow morning to fill these various torches, that is, the model of Almond, the model of Wenzel, the model of Bolser with the down-turned skirt, the down-turned skirt of Kari-Keen, together with the Kari-Keen commercial flare and the Bolser flare, and make any demonstration on any lot or any place else, if convenient, where the court wishes.

The Court:

It is all right with me. Do it out in front there and I will look out the window.

Mr. Owen:

I have no objection to such a test, except that it will not mean anything unless the weather is right.

The Court:

Suppose you take it up with the weather man.

Mr. Freeman:

They will all be tested at least under the same conditions. In other words, we will put all the flares in the same environment.

Mr. Owen:

Yes; but you can put these open flame torches out on a day like this, or any average day with average weather, and they will burn until the oil is gone. But that is not the situation that this invention was designed to meet.

Mr. Freeman:

I was talking about the Almond, Wenzel, and Bolser models, with and without skirt, and the Toledo Torch, and I had no reference to those. If the Court wishes, and we have the time, we will have them all available.

*Cecil H. Myers.*

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CECIL H. MYERS

My name is Cecil H. Myers. I live in Sioux City, Iowa. I am Vice President of the Kari-Keen Manufacturing Company.

I witnessed a test made of defendants' burners like Exhibits 3-b and 3-c and of plaintiff's burner like Exhibit 3-a, and of the device like Exhibit G, a model of the Almond patent. I witnessed one test that included this model, Exhibit D, of the Wenzel patent.

Mr. Owen:

I should like to enter an objection merely for the record on account of the fact that Exhibits J and G which purport to be the Almond device, are not the Almond device at all; they are only a part of it, in the first place, and, in the second place, what there is of it, is changed in a very material respect from the Almond patent.

The devices were tested under the same conditions. They were tested under varying air drafts and under varying waterfall.

We lighted the flares, put them all in a row, and had them all burned. We could not tell very much difference in the size of the flame emitted from any of them. There was a slight variation with some. We turned on a strong air blast applying it the same on each one. We kept putting this air blast closer to make it stronger until the flares began to go out from the wind. The flare made after the pattern of the Almond patent was the last one to go out. It stood the wind test stronger than any of them. It was Exhibit G. Exhibit J was in the test also. We tried them with waterfall. There seemed to be no apparent difference in the way they were extinguished in waterfall. They could all be put out by the blast, but it took a stronger blast to put out the one shown in Exhibit G. You could put out all of them by dropping water on them. Relatively they stood that test about the same.



*Joseph E. Withrow.*

## R E B U T T A L

### JOSEPH E. WITHROW

I never saw a structure made like the Almond patent, No. 193,796. I heard the testimony of defendant's witness regarding this patent.

Comparing the flame openings in the patent with those in Exhibit G, I would say that proportionally they are at least nine or ten times greater in Exhibit G than in the design shown in the patent. The openings of Exhibit J are proportionally very much larger yet, than Exhibit G.

From my knowledge of the operation of torches and flares, if a structure made in exact accordance with the drawings and description of the Almond patent were operated in the open air with any draft at all, the lighted vapor would blow out immediately, and the flame inside, which they designate as being very small, I am sure would also blow out in any breeze of any strength.

Q. How would that condition be affected if the shield G were removed? A. I was supposing that was removed. With the shield G on—

The Court:

It would help some, would it not?

A. Yes, sir.

The Court:

How much?

A. I still don't believe it would stand a very strong wind even with the shield on, but stronger than one without the shield on.

If made in exact accordance with the drawing of the patent with the shield on, I don't believe there would be two distinct flames, one at the upper end of the wick and the other at the outside of the cap H, if there was much stirring of the air. That is, if it was out-doors where there was a breeze. If there was no breeze, there would be a separation of the flame. If placed in a strong breeze, the vapor flame on the outside, emitted from the hole, would be the weaker, and attacked first, that would go out first.

Q. And that vapor, if there were any breeze, would be blown to the far side of the cap H, and that would be forced out at that side with the other side open to the wind, would it not? A. Yes, sir.

It would take a very slight breeze with the size of the flame shown on the inside and described in the patent and shown in the specification to blow out the inner flame. That would be less true with the shield G present, but it would still be true.

I would not say that there would be any heat transference from the burner cap down to the tank A in the structure shown in the Almond drawing. It is insulated against it.

The Court:

Where do you think this asbestos is on there?

A. On the wood and around the sliding tube D in which the inner tube slides.

D is a stationary tube, and the inner tube slides up and down in that.

Q. What colored flame would you expect to secure from a device made in strict accordance with the drawing of the Almond patent? A. Blue.

The Court:

What kind is preferred in practice, red?

A. If we can get it.

The Court:

What is the practice?

A. Yellow.

Q. What do you understand by a luminescent flame? A. A flame you can see, that has a color to it.

Q. In practice it is orange or yellow? A. It is more orange than yellow, yes.

Q. That is essential to the proper functioning of a flare or torch as a warning signal? A. Yes, sir.

A device made in exact accordance with Figure 2 of the Wenzel patent would stand some air. I would think with the flame as it is, it would stand about sixteen or seventeen miles an hour. With rain and wind, I think it would go out very quickly and at much lower rate of wind velocity. From the statement in the Wenzel patent

"5 indicates a globe or shade, which may or may not be used when the lamp is used as a night-light"

I would understand the shade to be made of glass.

The Court:

Dark-colored glass, is that what you have in mind?

A. Some substance through which light would come.

The Court:

This is a light you want on during the night?

Mr. Owen:

A dim light.

The Court:

You would not want anything but colored glass?

Mr. Owen:

Colored glass, yes.

The Court:

Blue glass.

Mr. Owen:

Yes, but you get no light whatever through that metal shade.

The Court:

I do not suppose you would.

Referring to defendants' Exhibit M and particularly to the sectional figures at the left of the inside page, I understand the upper end of the wick to be located above the air inlet holes and just below the flame outlet holes.

In Exhibits K and L, the location of the wick is below the inlet holes. It is shown best in the cut marked B, where the wick holder has an expanded flange at the top, which does not really come in contact with the wick; it only surrounds the wick; and in that same cut the inlet holes can be seen very much lower than this expanded portion of the wick holder. In the cut C, it shows the wick at the top of that expanded flange, which would necessarily result in the top of the wick being considerably above the inlet hole.

I am familiar with the structure of the Billingham patent, No. 181,030. I have tested one out thoroughly. I got a cut from a 1910 catalog of the E. P. Gleason Manufacturing Company, plaintiff's Exhibit 31. I asked Mr. Close to make drawings in the proportions exactly as shown in the patent, increased to the size of eleven inches, noted on the catalog page. I gave these drawings to a die maker, from which he made a torch. I tried this torch out with sperm oil, as recommended in their catalog, and put the wick at a reasonable height, and it worked very well. I took it to a gas jet. There was no flame showing through the holes at the top. The flame was approximately the same as that shown in this page of the catalog. I took it to a gas jet. At first I attempted to light it as described in the patent, but it was quite difficult.



sult, and I would have to hold the upper holes over the gas jet a long time before the gas jet would light, and every time it did light the flame inside would be extinguished. Billingham's patent reads:

"To light a street lamp: The cock of the same having been opened to allow of the supply of gas to the burner, the openings or perforations h are brought into proximity with the burner."

Those openings h are at the top  
 "and the flame, issuing through these perforations h, and deflected by the disk of the metal i, lights or ignites the gas."

In the first place, there was no flame being diverted through those holes at the top, and when I held the top holes over the gas jet, I had to hold a long time before the gas would ignite at all, and when it did, it would always put the flame inside the torch out. But in pulling it down over the gas jet and putting the holes d in contact first—those are the lower holes—it would light very quickly and very easily and the flame inside would remain burning, and it worked perfectly that way. I tried that many times at that time. Later I filled it again and had Mr. Close come down and we tried it again, and the results were identical. I also tried it with kerosene; first in an endeavor to try to get the flame high enough so it would strike the top closure and divert itself out through the holes, and in order to do that I had to raise the wick to about three inches. There was a great amount of vapor that came out of the top holes. The flame itself from the wick did not extend through the top holes, except that occasionally it would ignite and burn as a vapor outside, but that was only true the first few minutes. After ten minutes that ceased entirely. You could not get a flame at the top hole. I took it out-doors and at the least breeze, the flame kept going out of its own accord; so much carbon had formed it finally would be extinguished. I lit and re-lit it many times. Then I took off the wick and measured it and the wick had burned down to about an inch; and then I tried it at the ordinary height, about the height of a lamp wick, say, about one-eighth of an inch or quarter of an inch. That seemed to produce more carbon than the longer wick. The flame did not extend out of the top then. A great deal of smoke and vapor came out of the top, and finally the hole at the

top seemed to carbon up more quickly than it did with the longer flame. After the holes began to get choked, that light would continue to go out.

You could light the gas jet with it burning kerosene but only through the lower holes. When you had the long extended wick and the torch was still cold, before it got hot, it was possible to light the gas jet out of the top; after a few minutes when the torch had gotten hot, then it was impossible to light it out of the top holes.

The ignited gas would enter in the lower holes evidently and the minute it touched the flame inside, the flame would follow down through the lower holes to the gas jet. I watched very carefully but never was able to see any flame come out of the upper holes.

Exhibit 32 is the torch I made in accordance with the Billingham patent. It has sperm oil in it at present.

When you place this torch alongside an open gas jet, the gas escaping from the jet enters these holes at the lower portion of the torch and passes it until it comes in contact with the flame and the flame follows that and goes down to the jet. It is almost instantaneous.

When I had this torch with the upper holes in contact with the open gas jet, it seemed to take some time for the gas to get in there and work down to the flame, sometimes it would take thirty seconds, forty-five seconds, and when the gas finally ignited, it would extinguish the flame. The teaching of the patent is that you use the upper holes to do the lighting.

The Heath patent, No. 66,021, says:

"When the burner is to be lighted the apparatus is inserted through the bottom of the lamp, till its end coming in contact with the handle."

that is the handle on the gas jet

"turns it over into the position represented in dotted lines. The cock of the burner is thus opened, and the gas escaping therefrom, entering through the apertures b and b' comes in contact with the flame of the lamp C and is thereby lighted."

The apertures b and b' are located both above and below, all along the sides, and that is the way I operated this torch. The only way you could operate it successfully would be by placing the torch so that the gas would enter the lower holes and not the upper holes.

## CROSS-EXAMINATION

I did not operate a torch like the Heath patent.

I did not build any model like Wenzel or like Almond.

I will mark on Exhibit 11-b with a pencil how far the wick should project.

Looking at our own patent at the showing of the wick in dotted lines, I did not learn the proper height of the wick from the patent. As a matter of fact, the showing in the patent is different from what we now recommend to be the proper wick height.

I suppose if you put a wick in any of these flares and it did not burn to suit you, you would just change the height of the wick.

Q. I think you said the upper holes in the Almond Model, Defendants' Exhibit G, were nine or ten times greater than the size of the holes shown in the Almond patent? A. No, I did not; I said proportionately, I would judge them to be nine or ten times greater.

I would think, however, the patent shows proportionally more holes. I have no way of knowing exactly the relative total area of the holes shown in the patent compared with the relative total area with the holes shown in the model, Exhibit G.

I brought over the correspondence you requested.

I forgot about the records as to the first actual distribution of literature and first actual sales.

## LYMAN W. CLOSE

I heard the testimony of defendants' expert with reference to the Almond patent.

With my experience in the practical operation of warning signals, I would say that a construction made in exact accordance with the drawing of the Almond patent would not operate as a warning signal. The flame would be very unstable and in any breeze it would be extinguished.

The removal of the outside shield G would increase the liability of being extinguished.

I would not consider this construction would make a suitable warning signal for use at night.



**FURTHER CROSS EXAMINATION**

I did not look up the early records of sales and distribution. I am quite sure they were in the latter part of January, 1929.

I think the circular you hand me, marked defendants' Exhibit O, is the complete circular from which Exhibit 8 was taken. These letters on the back of Exhibit O are letters of commendation we had from satisfied customers along through the same period of the letters of Exhibit 8 of complaint about the early Toledo torch.

Mr. Owen:

I should like to make a statement in that connection, Your Honor. I was responsible for cutting that section out of that circular and offering it alone. I did it not to avoid putting in those letters; the fact is I never read the letters; but on the outside of the circular is an illustration of our first torch; on the inside is the second torch, and that was put in for the purpose of showing the second torch.

I remember Exhibit 5, the package of complaint letters about our old type wick torches. I read yesterday from a letter from Hedge & Matheis Company of Portland, Maine to us. The letter now produced, dated July 29, 1927, and addressed to Hedge & Matheis Company is an answer. The answer contains the P. S.

"For the past six months Toledo Torches have been thoroughly tried and carefully watched by the Iowa State Highway Commission in twelve scattered counties throughout the State of Iowa. This has taken place during the windy and very rainy spring and early summer which they have had, and as a result of this, on Wednesday last, we received an order from the Iowa State Highway Commission for 1000 Toledo Torches. This has been the stormiest and wettest spring the state of Iowa has had for a good many years."

I testified yesterday that I knew of no instances of complaints under our new torch, where the real difficulty was not in fact due to some maladjustment, failure to comply with our instructions or something of that sort. In the answer to one of the letters of complaint, which were a part of Exhibit 5, the answer being dated February 13, 1928, addressed to Clarence H. Buehl, I said:

"We have your letter of February 10, and are at a loss to know just what to attribute the failure of Toledo torches to, if the fuel which your customer is using is of a good grade and the wicks are extended far enough. We have never known of a case where they were having trouble with the torches going out that we were not able to solve the difficulty by correcting either the grade of fuel being used or the manner in which the wick is being manipulated."

That was a company letter. I did not write those letters. It was sent to the customer by the company.

These letters I have read, I have produced in response to your request yesterday.

### RE-DIRECT EXAMINATION

When we got complaints, while we were selling open flame torches, we tried to correct them. When we started the business, we were sold on the torch or we never would have gone into the business of producing it. We gradually arrived at the conviction that they were not all they should be. While we did receive a number of complaints at the same time we received some letters from customers that commended the torch and stated that they worked all right.

We found from the number of complaints that they did not work right. We found that out from our own tests on severe conditions; but those severe conditions were not very often present in actual practice or actual operation of the torch on the ground. It was only after all of these complaints did come in that we finally were forced to the conviction that they were not as practical as we would like to have them, and then we began to make those experiments I testified about yesterday.

Mr. Owen:

We have the information requested by Counsel. The first shipment of the torch involving the features of the patent was January 7, 1929. The first circulars of that torch were distributed at the Cleveland Road Show, January 14th to 18th, 1929.

*Stipulation.*  
*Certificate of Court.*

---

**STIPULATION**

(Filed September 26, 1935)

It is hereby stipulated and agreed by and between the parties hereto, through their respective counsel, that the foregoing Narrative Statement of Evidence is true and correct, that it is complete and that it has been properly prepared and lodged as provided in the Rules, and that the only portions retained in question and answer form are those portions desired by the parties to be so stated.

It is further stipulated and agreed that the court may be asked to approve said statement of the evidence forthwith.

Bair, Freeman & Sinclair,  
Holloway, Peppers & Romanoff,  
Attorneys for Defendants.  
Owen & Owen,  
Attorneys for Plaintiff.

Dated: September 26, 1935.

**CERTIFICATE OF COURT**

(Filed September 26, 1935)

The foregoing narrative statement of evidence is hereby approved as a true, complete and correct narrative of the testimony introduced in these causes, and it is directed that the same be filed in the Clerk's office and so certified forthwith by the Clerk of this Court.

Geo. P. Hahn,

Judge of the U. S. District Court.

Dated: September 26, 1935.:



*Order Approving Narrative Statement of Evidence and  
Ordering Same Filed.*

---

**ORDER APPROVING NARRATIVE STATEMENT OF  
EVIDENCE AND ORDERING SAME FILED**

(Filed and Entered by the Honorable Geo. P. Hahn,  
on September 26, 1935)

No. 1408 In Equity.

Upon Stipulation by and between the parties hereto, through their respective counsel, it is Ordered, Adjudged and Decreed that the Narrative Statement of Evidence is hereby approved as a true, complete and correct narrative of the testimony introduced in these cases, and it is directed that the same be filed in the Clerk's office and so certified forthwith by the Clerk of this Court.

**ORDER APPROVING NARRATIVE STATEMENT OF  
EVIDENCE AND ORDERING SAME FILED**

(Filed and Entered by the Honorable Geo. P. Hahn,  
on September 26, 1935)

No. 1412 In Equity.

Upon Stipulation by and between the parties hereto, through their respective counsel, it is Ordered, Adjudged and Decreed that the narrative statement of evidence is hereby approved as a true, complete and correct narrative of the testimony introduced in these cases, and it is directed that the same be filed in the Clerk's Office and so certified forthwith by the Clerk of this Court.

*Stipulation Re Certification of Record.*

---

**STIPULATION RE CERTIFICATION OF RECORD**

(Filed September 27, 1935)

Equity No. 1408.

In accordance with Section 6 of Rule 44 of the general rules of this Court, it is hereby agreed that the record as presented to the Clerk by the printer may be certified by the Clerk as required by law and the rules of the Appellate Court as a true, full and complete copy of the original pleadings, papers and orders used on the trial of these causes, as set forth in the Praecipe for transcript without further comparison by the Clerk.

Bair, Freeman & Sinclair,  
Holloway, Peppers & Romanoff,  
Attorneys for Defendants

.....  
Attorneys for Plaintiff.

Dated: September 26, 1935.

**STIPULATION RE CERTIFICATION OF RECORD**

(Filed September 27, 1935)

Equity No. 1412.

In accordance with Section 6 of Rule 44 of the general rules of this Court, it is hereby agreed that the record as presented to the Clerk by the printer may be certified by the Clerk as required by law and the rules of the Appellate Court as a true, full and complete copy of the original pleadings, papers and orders used on the trial of these causes, as set forth in the Praecipe for transcript without further comparison by the Clerk.

Bair, Freeman & Sinclair,  
Holloway, Peppers & Romanoff,  
Attorneys for Defendants

.....  
Attorneys for Plaintiff.

Dated: September 26, 1935.

**PRAECIPE**

(Filed September 26, 1935)

To the Clerk of the United States District Court,  
Northern District of Ohio, Western Division:

You are requested to prepare a Transcript of Record to be filed in the United States Circuit Court of Appeals for the Sixth Circuit, pursuant to Appeals allowed in the above-entitled causes in Equity, which causes have been consolidated, and include in such Transcript of Record, the following papers and Exhibits, which are to be printed:

0. Title Page.
00. Caption.
1. The Bill of Complaint in Equity No. 1408.
2. Answer in Equity No. 1408.
3. Plaintiff's Interrogatories in Equity No. 1408, including attached circular.
4. Defendant's Answer to Plaintiff's Interrogatories in Equity No. 1408.
5. Defendant's Further Answers to Plaintiff's Interrogatories in Equity No. 1408.
6. Bill of Complaint in Equity No. 1412, omitting Paragraphs I, III, IV, V, VI, VII, VIII, IX, and X, and the prayer consisting of five paragraphs, and substituting for the respective parts omitted, the following:  
--- "Paragraphs I, III, IV, V, VI, VII, VIII, IX and X, and the prayer in this case are exactly the same as the corresponding paragraphs and prayer in the Bill of Complaint in Equity No. 1408." ---
7. The Answer in Equity No. 1412, omitting Paragraphs 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 and substituting for the Paragraphs so omitted, the following:  
--- "Paragraphs 1 to 13 of the Answer in Equity No. 1412, are exactly the same as the corresponding Paragraphs of the Answer in Equity No. 1408." ---
8. Plaintiff's Interrogatories in Equity No. 1412, including attached circular.
9. Defendant's Answers to Plaintiff's Interrogatories in Equity No. 1412.



*Praecipe.*

10. Defendant's Further Answers to Plaintiff's Interrogatories in Equity No. 1412.
11. The Memorandum Opinion in Equity 1408 and 1412.
12. Final Decree in Equity No. 1408.
13. Final Decree in Equity No. 1412.
14. Stipulation for the consolidation of Equity 1408 and Equity 1412 for the purposes of Appeal.
15. Petition for Appeal.
16. Assignment of Errors.
17. Order Allowing Appeal.
18. Bond in Equity No. 1408.
19. Bond in Equity No. 1412.
20. Citation in Equity No. 1408 and Equity No. 1412.
21. Narrative Statement of Testimony.
22. Stipulation of Approval and Certificate of Narrative Statement of Testimony.
- 22½. Stipulation re Certification of Record.
23. This Praecipe.
24. Any orders extending time.
25. Clerk's Certificate.

**PLAINTIFF'S PAPER EXHIBITS**

- Ex. 1. Withrow and Close patent in suit, No. 1,732,708.
- Ex. 2-a. Drawing—Figure 3 of patent in suit—with terms of Claims 2 and 11 applied.
- Ex. 2-b. Drawing of defendant's torch in Equity 1408 (Bolser) with Claims 2 and 11 applied.
- Ex. 2-c. Drawing of defendant's torch in Equity 1412 (Kari-Keen) with Claims 2 and 11 applied.
- Ex. 4. Circular of plaintiff's first open flame torch.
- Ex. 6. Yellow tag sent out by plaintiff with old torches recommending 1½ inch wick exposure.

*Praecipe.*

- Ex. 7. Sketch showing experimental burner with long tube extending into fuel tank.
- Ex. 8. Part of circular showing open flame torch on which plaintiff went into production in 1928. Actual device is shown in physical Exhibit 29.
- Ex. 10-a.
- Ex. 10-b.
- Ex. 10-c.
- Ex. 10-d.
- Ex. 10-e.
- Ex. 10-f. Drawings of experimental torches  
Ex. 10-g. tried by plaintiff.
- Ex. 10-h.
- Ex. 10-i.
- Ex. 10-j.
- Ex. 11-a. Circular of plaintiff's construction torch embodying patented burner in suit.
- Ex. 11-b. Plaintiff's direction sheet for burner in suit.
- Ex. 11-c. Plaintiff's truck flare circular.
- Ex. 15. Circular showing letter from Michigan State Highway Commissioner.
- Ex. 17. Test records of oil consumption by open flame burner and plaintiff's and defendant's enclosed flame burners.
- Ex. 18. Test records of plaintiff's enclosed flame burner and open flame burner as to wick consumption.
- Ex. 19-a. Bolser circular.
- Ex. 19-b. Bolser circular letter.
- Ex. 19-c. Letter from Bolser customer enclosed with circular.
- Ex. 20. Kari-Keen circular.
- Ex. 22. Dietz first open flame burner circular.
- Ex. 23. Dietz circular showing hooded burner.
- Ex. 24. Dietz latest circular.

- Ex. 25. Circular of McCloskey open flame torch made for him in 1925.
- Ex. 26. Circular of McCloskey torch brought out in 1929.
- Ex. 27. Letter from Iowa Highway Commission.
- Ex. 30. Circular concerning plaintiff's open flame torch.
- Ex. 31. Catalog sheet illustrating device of Billingham patent, No. 181,030.

### DEFENDANTS' EXHIBITS (Paper)

- Ex. A. Toledo Pressed Steel Company circular.
- Ex. F1. Almond drawing with letters of its patent.
- Ex. K. Drawing — defendant's flare complained of — Equity No. 1408 (Bolser).
- Ex. L. Drawing — defendant's flare complained of — Equity No. 1412 (Kari-Keen).
- Ex. M. Bolser circular.
- Ex. N. Book of Patents, — including only the following:

Jones et al	No.	56,949	August	7, 1866
Heath	No.	66,021	June	25, 1867
Dyott	No.	116,573	July	4, 1871
Hathaway	No.	147,496	February	17, 1874
Billingham	No.	181,030	August	15, 1876
Reekie	No.	192,130	June	19, 1877
Almond	No.	193,796	August	7, 1877
Heston	No.	270,587	January	16, 1883
Blake	No.	453,335	June	2, 1891
Flora	No.	755,864	March	29, 1904
Rutz et al	No.	1,009,184	November	21, 1911
Kahn	No.	1,175,527	March	14, 1916
Knowles	No.	22,771	January	25, 1859
Thomas	No.	32,906	July	23, 1861
Martine	No.	35,349	May	20, 1862
Requa	No.	318,030	May	19, 1885
Wenzel	No.	577,090	February	16, 1897
Nichols	No.	1,036,514	August	12, 1912
McCloskey	No.	1,610,301	December	14, 1926
Close	No.	1,613,819	January	11, 1927



Ex. O. Whole circular of plaintiff's Exhibit 8.

Kindly deliver the above to The Wilkinson-Sloat Printing Company, Toledo, Ohio, for printing.

Please forward the following documentary Exhibits to the Clerk of the Court of Appeals for the Sixth Circuit at Cincinnati, Ohio.

Plaintiff's Exhibit 5. Package of letters of complaint in regard to the open wick torch originally manufactured by the plaintiff.

Plaintiff's Exhibit 9. Package of complaint letters about plaintiff's torch, Exhibit 8, open flame type.

Plaintiff's Exhibit 12. Letters of commendation from plaintiff's customers referring to device in suit.

Plaintiff's Exhibit 13. Plaintiff's orders for torches of type in suit from Iowa.

Plaintiff's Exhibit 14. Plaintiff's orders for torches of type in suit from other territory.

Plaintiff's Exhibit 21. Dietz Lantern Catalog.

Defendant's Exhibit F. Folding section drawing of Almond, Figure 1, Patent No. 193,796.

Please forward the following Exhibits to the Clerk of the Court of Appeals for the Sixth Circuit at Cincinnati, which Exhibits are physical Exhibits:

### PLAINTIFF'S PHYSICAL EXHIBITS

Ex. 3-a. Plaintiff's commercial torch made under patent in suit.

Ex. 3-b. Bolser Torch — Equity 1408 (Corresponds to drawing, Exhibit 2-b).

Ex. 3-c. Kari-Keen Torch, Equity 1412 (Corresponds to drawing, Exhibit 2-c).

*Praecipe.*

- Ex. 28. First Toledo open flame torch made November, 1926.
- Ex. 29. Second Toledo open flame torch made in July, 1928, corresponds to Exhibit 8.
- Ex. 32. Model of Billingham patent, No. 181,030.

## DEFENDANTS' PHYSICAL EXHIBITS

- Ex. B. Old Railroad Flare.
- Ex. C. Plaintiff's present commercial flare — half cut away.
- Ex. D. Model — Wenzel patent, No. 577,090.
- Ex. E. Model — Wenzel patent, No. 577,090 — provided with imperforate top.
- Ex. G. Almond patent model — Almond Patent No. 193,796.
- Ex. H. Defendant's burner with removable skirt (Bolser).
- Ex. I. Defendant's burner with skirt (Bolser).
- Ex. J. Defendant's flare with skirt (Bolser).

Standard Parts, Inc., and  
Huebner Supply Company  
By Holloway, Peppers & Romanoff,  
and by Bair, Freeman & Sinclair,  
Their Attorneys.

W. P. Bair,  
Of Counsel.  
Des Moines, Iowa.

## STIPULATION

It Is Hereby Stipulated that the Record for the Court of Appeals may be made up according to the foregoing Praecipe, and that the following Exhibits may be sent up as separate Exhibits and need not be printed as part of the Record —

- Plaintiff's Ex. 5. Package of letters of complaint in regard to the open wick torch originally manufactured by plaintiff.

*Praecipe.*

---

- Plaintiff's Ex. 9. Package of complaint letters about plaintiff's torch, Exhibit 8, open flame type.
- Plaintiff's Ex. 12. Letters of commendation from plaintiff's customers referring to device in suit.
- Plaintiff's Ex. 13. Plaintiff's orders for torches of type in suit from Iowa.
- Plaintiff's Ex. 14. Plaintiff's orders for torches of type in suit from other territory.
- Plaintiff's Ex. 16. Anthes license dated August 15, 1933.
- Defendant's Ex. F. Folding section drawing of Almond, Figure 1, Patent No. 193,796.

Owen & Owen,  
Attorneys for Plaintiff,  
The Toledo Pressed Steel Company  
Bair, Freeman & Sinclair, and  
Holloway, Peppers & Romanoff,  
Attorneys for Defendants  
Standard Parts, Inc. and  
Huebner Supply Company.



*Stipulation.***STIPULATION**

(Filed October 23, 1935)

It is hereby stipulated between the parties hereto that the cuts contained in the circulars bound in the appeal record at page 154 are the same as those which appear in the circular attached to plaintiff's Interrogatories filed on March 9th, 1934, in the case of The Toledo Pressed Steel Company vs. Huebner Supply Company, Equity, No. 1412, and that the circulars first referred to herein may be used in place of the circulars attached to said Interrogatories.

The Toledo Pressed Steel Company,  
Plaintiff,

By Owen & Owen,  
Its Attorneys.

Toledo, Ohio .....

Standard Parts, Inc.,  
and

Huebner Supply Company,

By Bair, Freeman & Sinclair,

By Holloway, Peppers & Romanoff,  
Their Attorneys.

Toledo, Ohio .....

Approved this 23rd day of October, 1935.

Geo. P. Hahn,  
United States District Judge.

**ORDER**

(Filed October 23, 1935)

Upon application of defendants, and it appearing to the Court that the printer is unable to prepare the record within the statutory time, it is ordered that the time for filing of the transcript of record in the Circuit Court of Appeals for the Sixth District, at Cincinnati, be and the same hereby is extended to November 27th, 1935.

Geo. P. Hahn,

United States District Judge.

Dated: October 22nd, 1935.

Approved:—

Owen &amp; Owen,

Attorneys for Plaintiff.

---

Attorneys for Defendants.

*Certificate of Clerk.***CERTIFICATE OF CLERK**

Northern District of Ohio, ss.

I, F. J. Denzler, Clerk of the United States District Court within and for said district, do hereby certify that the foregoing printed pages contain a full, true and complete copy of the records and all proceedings in these causes, including the petitions for appeal, assignments of errors, orders allowing appeal and the bonds on appeal, in accordance with the consolidated praecipe for transcript filed herein, the originals of which, except certain exhibits withdrawn by leave of Court, remain in my custody as Clerk of said Court.

There are also attached to and transmitted herewith the citations issued and allowed herein.

In testimony whereof, I have hereunto signed my name and affixed the seal of said Court, at Toledo, in said district, this.....day of October, A. D., 1933, and in the 160th year of the Independence of the United States of America.

F. J. Denzler,  
Clerk.

(Seal)

By K. V. Wilson,  
Deputy Clerk.





Exhibit B - attached to  
plaintiff's Interrogatories - Equity No. 1408

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# APPROVED!

Approved by states of Iowa, Minnesota,  
Wisconsin, Ohio and other states  
having flare laws.

**PROTECT  
YOURSELF  
AND OTHERS  
WITH THE**



Distributed by  
**EXHIBIT "B"**

Attached to Plaintiff's Interrogatories  
Equity No. 1412  
Stipulation Filed October 23, 1935  
(See Page 150)

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Printed in U. S. A.



**THE PREVENTER OF ACCIDENTS  
ON HIGHWAYS**



# SAFETY ON THE HIGHWAYS!

New Laws in Many States and Some Large Liability Insurance Companies Are Now Requiring that All Trucks Carry Flares.

**Kari-Keen**

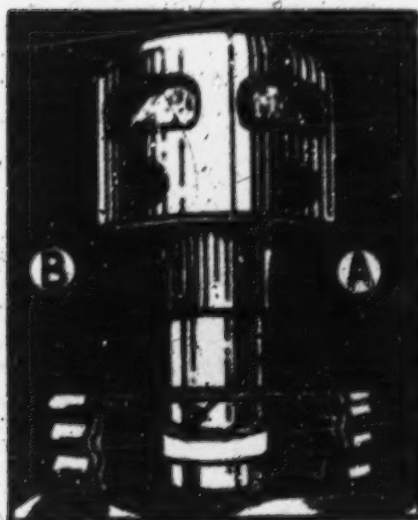
**TRUCK FLARES  
... AND FLAGS**

Provide This Protection and Safety to the Truck Operator at the Lowest Possible Cost.

## *Kari-Keen Flares Approved in Many States*

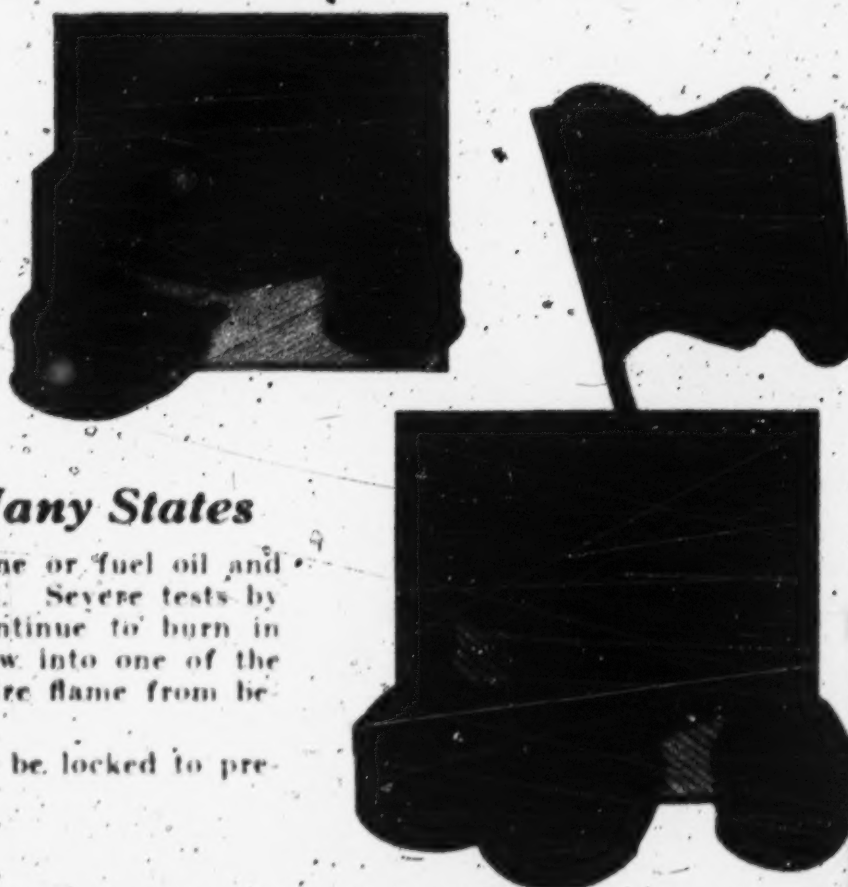
The new burner generates a gas from the kerosene or fuel oil and only the gas burns. This adds long life to the wick. Severe tests by State Engineers show the Kari-Keen Flare will continue to burn in high winds but may be extinguished by a quick blow into one of the burner openings. Ventilated wick tube prevents entire flame from becoming too hot to handle.

The steel case keeps them clean and dry and may be locked to prevent theft or loss.



Kerosene burning flares for carrying on trucks must have an air vent to prevent the forcing of oil out through the wick from expansion of oil and gases within when carried in the hot sun. Please note the specially constructed air vent as shown in "A" in the accompanying illustration, which also prevents any oil from splashing out when bounced over rough roads. Any oil which splashes up through the vent is deflected into the air space "B" and drains back into the flare.

This is an exclusive feature on Kari-Keen Truck Flares, and is one of the most important.



- No. 1-B—Single flare unit used for replacement and contractor warning torch. Burning time about 10 hours. Shipping weight per unit, 14 oz. Each \$1.00
- No. 2-B—Two flares and steel carrying case. Burning time about 10 hours. Shipping weight, carton of 6 kits, 30 lbs. Per kit \$2.75
- No. 2-B-F—Same as No. 2-B but includes two 12x18 inch red flags with collapsible steel staffs. Shipping weight, carton of 6 kits, 39 lbs. Per kit \$3.75
- No. 3-B—Three flares and steel carrying case. Burning time about 10 hours. Shipping weight, carton of 6 kits, 42 lbs. Per kit \$4.00
- No. 3-B-F—Same as No. 3-B but includes three red flags, 20x30 inches, with collapsible steel staffs. Shipping weight, carton of 6 kits, 54 lbs. Per kit \$5.10
- Extra Flags are available for either the No. 2 or No. 3 kit. Weight each, 10 oz. Each \$1.25

### SMALL FLARES FOR AUTOMOBILES

- No. 2-A-B—Two flares in steel case, 4 1/2 x 4 1/2 x 9 inches. Burning time about 4 hours. Shipping weight per kit, 2 1/2 lbs. Per kit \$2.50

**KARI-KEEN MANUFACTURING COMPANY**

**SIoux CITY, IOWA**



155

No. 1,732,708

Withrow and Close

PLAINTIFF'S EXHIBIT 1.

MAIL DIVISION

SEP 14 1935

PATENT OFFICE

## District Court of the United States

District of Michigan

HONORABLE COMMISSIONER OF PATENTS,  
Washington, D. C.

Sir:

In compliance with the Act of February 18, 1922 (42 Stat. L. 392), you are advised that there was filed on the ninth day of September, 1935 in this court an action, suit, or proceeding No. 7203, entitled:

Name The Toledo Pressed Steel Company, Plaintiff,Address Toledo, Ohio

VERSUS

Name Keller Tractor & Equipment Company, DefendantAddress Detroit, Michigan.

brought upon the following patents:

PATENT NO.	DATE OF PATENT	PATENTEE
1,732,708	October 22, 1929	Toledo Pressed Steel Company

In the above-entitled case, on the \_\_\_\_\_ day of \_\_\_\_\_, 1935, the following patents have been included by \_\_\_\_\_ (insert amendment, answer, cross bill, or other pleading):

PATENT NO.	DATE OF PATENT	PATENTEE

In the above-entitled case the following decision has been rendered or decree issued:

IN WITNESS WHEREOF I have affixed my hand this ninth day of September, 1935, at Detroit, Michigan.

*Charles M. Moorhead*  
Clerk of said Court.

PLAINTIFF'S EXHIBIT 1.

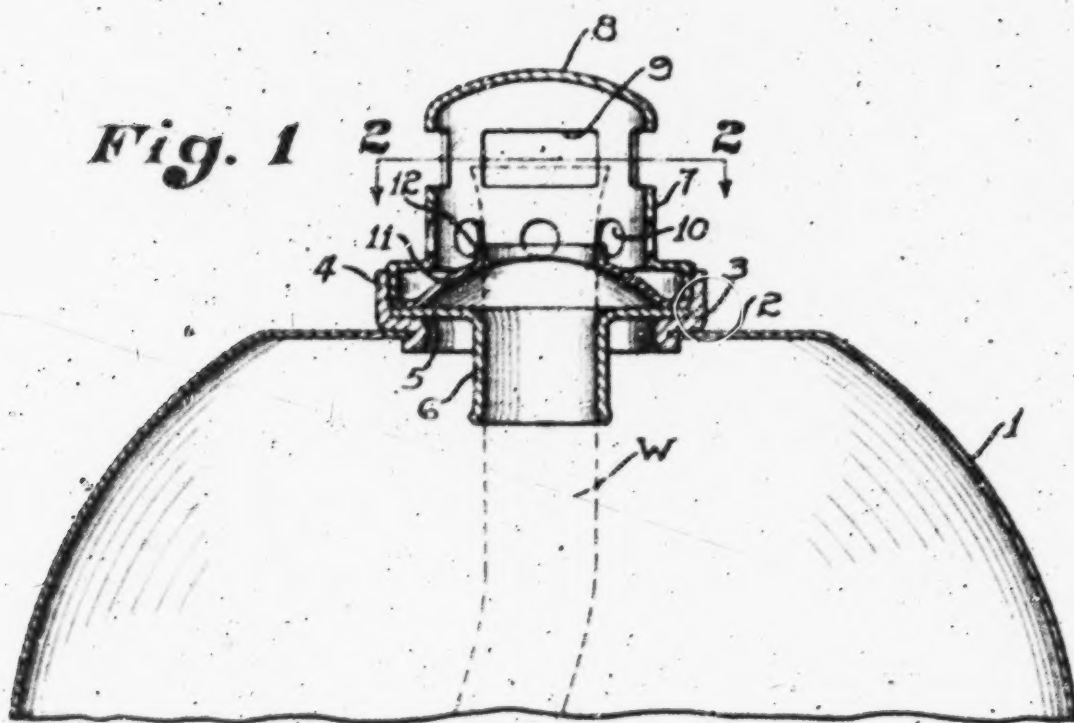
Oct. 22, 1929.

J. E. WITHROW ET AL

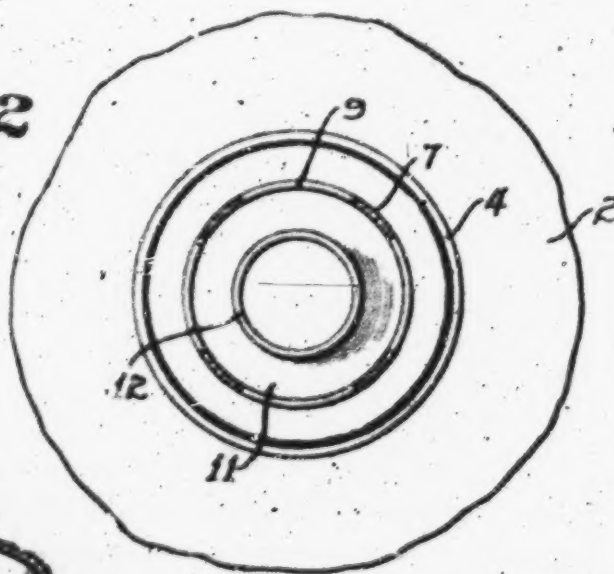
1,732,708

BURNER

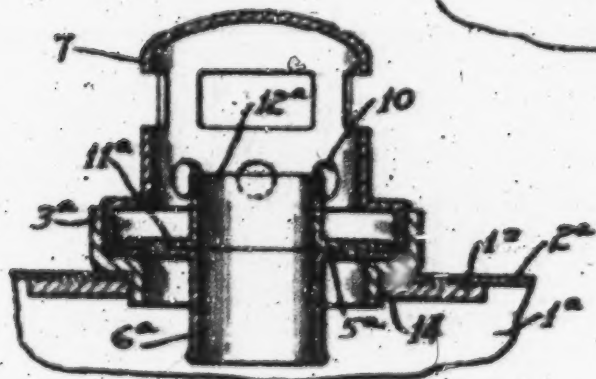
Filed Dec. 26, 1928



**Fig. 2**



**Fig. 3**



Inventors

Joseph E. Withrow  
Lyman W. Close

Oliver & Owen

Attorneys

Patented Oct. 22, 1929

1,732,708

## UNITED STATES PATENT OFFICE

JOSEPH R. WITHROW AND LYMAN W. CLOSE, OF TOLEDO, OHIO, ASSIGNORS TO THE  
TOLEDO PRESSED STEEL COMPANY, OF TOLEDO, OHIO, A CORPORATION OF OHIO

## BURNER

Application filed December 24, 1923. Serial No. 329,422.

This invention relates to street torches, such as are commonly used for illuminating road obstructions, and usually referred to as construction torches, but more particularly to devices for increasing the efficiency of such torches and militating against extinguishment of the torch flame, and an object is to provide a simple and efficient attachment for torches of the above character for increasing the efficiency thereof and materially reducing the liability of extinguishment of the flame by high winds. Another object is to provide a burner so constructed and arranged that liability of extinguishment of the flame by high winds or by rain is reduced to a minimum. Further objects are to provide a device of the above character which may be inexpensively manufactured and has the new and improved features of construction hereinafter described.

The invention is shown by way of illustration in the accompanying drawings, in which:

Fig. 1 is a vertical sectional elevation of a torch with the device applied thereto;

Fig. 2 is a transverse sectional view on the line 2-2 of Fig. 1; and

Fig. 3 is a vertical sectional elevation of an alternate form of burner.

The illustrated embodiment of the invention comprises a sheet metal torch body of substantially frusto-spherical shape having an opening for a wick in its upper end 2. Crimped over the edges of such opening is a member 3 having an outwardly extending annular flange 4, which is internally threaded. Resting on the shelf formed by the member 3 is a disc like member 5 having a central tubular extension 6, which projects inside of the torch body 1 a substantial distance. A wick W is adapted to extend through the extension 6 and to be held in position thereby. Screwed onto the threads of the annular flange 4 is a cap 7, which extends inwardly from the flange 4, and then upwardly. The upper wall 8 of the cap 7 is imperforate, and as shown, is dome shaped. Formed in the side walls of the cap beneath the end wall 8 is a series of relatively large rectangular openings 9 through which the flame of the torch passes. Beneath the openings 9 are

series of relatively small air ports 10, through which air passes to the inside of the cap for the torch flame. It will be observed that the cap is of such dimensions that the side walls thereof are spaced from the sides and end of the wick W.

Resting upon the disc shaped member 5 is an arched disc 11 having an upwardly extending annular flange 12 terminating in the region of the air ports 10. As shown, the upper end of the extension 12 covers approximately one-third of the area of the ports 10. The function of the disc 11 is to prevent the air entering the inside of the cap 7 from cooling the wick W to such an extent that the temperature of the oil passing up the wick is reduced below the desired point.

When the outer end of the wick W is lighted the oil passing up the wick by capillary action is heated, thereby maintaining the oil in the region of the outer end of the wick at the proper flashing point. This heating of the wick is facilitated by the reflection of heat from the dome-shaped cap and by conduction to wick-holding collars 13 and 6 from their supporting flanges, flange 11 receiving reflected heat and being in contact with the lower edge of the heated cap. Air inlet openings 10 being above the lower edge of the cap leaves a space within the cap and above the flange of the wick holder for comparatively quiescent air. This quiescent layer of air in contact with the wick holder and the restriction of inlet ports to admit to the wick and holder only such air as is needed for combustion aids in maintaining the heat of the wick holder and wick. This militates against extinguishing the flame by high winds. Sufficient cool outer air is supplied to the end portion of the wick through the ports 10 for securing a satisfactory flame, and the latter extends through the openings 9 to provide a satisfactory signal. It has been found that with the above described construction and arrangement, the oil consumption is materially decreased. It is also found that the amount of wick used is likewise decreased. Another outstanding advantage resides in reducing the liability of extinguishing the flame by high winds or rain.



In the embodiment shown on Fig. 3, there is fixed, as by welding to the torch body 1<sup>a</sup>, a ring 13 which surrounds the opening in the top wall 2<sup>a</sup> and the walls of the opening are formed with screw threads 14 to receive a flanged member 3<sup>a</sup>. This permits the burner to be attached to or detached from the torch as a unit. In this form the disc 5<sup>a</sup> has an inwardly extending wick-receiving tube 6<sup>a</sup>, and fixed to the upper surface of the disc 5<sup>a</sup> is a disc 11<sup>a</sup> provided with an upwardly extending flange or tube 12<sup>a</sup>. The upper end of the flange 12<sup>a</sup> covers approximately one half of the openings 10 of the cap 7. It will be understood that the arrangement of tubes 6<sup>a</sup> and 12<sup>a</sup> may be used to advantage in the form shown in Fig. 1.

While we have shown and described constructions which admirably fulfill the objects primarily enumerated, it is to be understood that the above description is given by way of illustration and not of limitation, and numerous changes in details of construction and arrangement may be effected without departing from the spirit of the invention, especially as defined in the appended claims.

What we claim as new and desire to secure by Letters Patent is:

1. In a device of the class described, a torch body having an opening at its upper end, a wick-receiving tube extending into said opening, and a cap disposed on the outer side of said torch body to enclose the outer end of the wick, said cap having an imperforate upper wall, lateral flame openings, and air openings below the flame openings.

2. In a device of the class described, a torch body having an opening for a wick, and a flame guard for said wick mounted on the outside of said torch body, said guard including a cap provided with an imperforate top wall and lateral flame openings adapted to emit a luminescent flame, and air ports.

3. In a device of the class described, a torch body having an opening for a wick, an outwardly extending flange in the region of said opening, and a flame guard detachably connected to said flange and comprising a cap provided with side flame openings and air ports.

4. In a device of the class described, a torch body having a wick opening, an outwardly projecting flange in the region of said opening, a wick-receiving tube extending inside of said torch body, and a guard for the outer end of the wick engaging said flange, said guard comprising a removable cap having an imperforate top, side flame openings and air openings.

5. In a device of the class described, a construction torch having an opening in its upper end for a wick, means to hold the wick in place, and a guard fitting over the outer end of the wick but spaced from the sides there-

of, said guard having an imperforate top wall and side flame and air openings.

6. In a device of the class described, a torch body having a wick-opening, a tube for receiving the wick and adapted to extend inside of the torch body, an outwardly extending flange in the region of said wick-opening, and a cap connected to said flange and having an imperforate top wall, said cap having a flame opening adjacent its outer end and an air port beneath said flame opening.

7. In a device of the class described, a torch body having a wick-opening, a cap for enclosing the outer end of the wick but spaced from the sides thereof, an imperforate end wall for said cap, said cap having a series of flame openings and a series of air ports beneath the flame openings, and a disc adapted to embrace the wick and having a flanged upper portion disposed in the region of said air ports.

8. In a device of the class described, a torch body having a wick opening, an outwardly extending flange in the region of said opening, a wick tube extending inside of said torch body, a cap adapted to enclose the outer end of the wick and engaging said flange, an imperforate end wall for said cap, said cap having a series of flame openings and a series of air ports beneath said flame openings, and a flanged disc adapted to embrace the wick and having its upper end disposed adjacent said air ports.

9. In a device of the class described, a burner unit adapted for attachment to a torch, said unit comprising a supporting member for engagement with a torch body, a wick-holding member having oppositely extending flange portions for embracing a wick, and a cap superposed upon said supporting member, said cap being provided with vertically spaced air-inlet and flame-outlet openings.

10. In a device of the class described, a burner unit adapted for attachment to a torch, said unit comprising a supporting member for engagement with a torch body, a wick-holding member having oppositely extending flange portions for embracing a wick, and a cap superposed upon said supporting member, said cap being provided with vertically spaced air-inlet and flame-outlet openings, the upper end portion of one of said flange portions covering approximately one-half of said air-inlet openings.

11. A burner for a construction torch adapted to emit a luminescent flame and comprising a wick holder having a portion in contact with the wick and a supporting and heat-receiving flange, and means enclosing a space above said flange and surrounding the wick, except for provision for lateral exit of flame and restricted entrance of air for combustion.

12. A burner for a construction torch

adapted to emit a luminescent flame and comprising a wick holder having a portion in contact with the wick and a lateral flange, and a cap enclosing and spaced from the end of the wick and having an imperforate top and provision for lateral exit of flame and entrance of air, and the bottom of the cap being in heat conducting relation to said flange.

13. A burner for a construction torch adapted to emit a luminescent flame and comprising a wick holder having a portion in contact with the wick and a laterally extending flange and a cap over the wick, the cap having an imperforate, dome-shaped top wall, a lateral flame opening approximately even with the top of the wick and a smaller opening for the inlet of air lower than the flame opening and above the lower edge of the cap, said lower edge being in heat-transferring relation to said flange.

14. A construction torch adapted to emit a luminescent flame and comprising a fuel receptacle with an opening in its top, a wick extending upward through said opening, a wick holder having a collar holding the wick and a flange resting in said opening, and a cap screwed into said opening and against said flange, the cap surrounding and being opened from the end of said wick, having an imperforate, dome-shaped upper wall, lateral space for the exit of flame adjacent said wall, and restricted inlet for air beneath said space.

In testimony whereof we have hereunto signed our names to this specification.

J. E. WITHROW.  
LYMAN W. CLOSE

1928  
1929

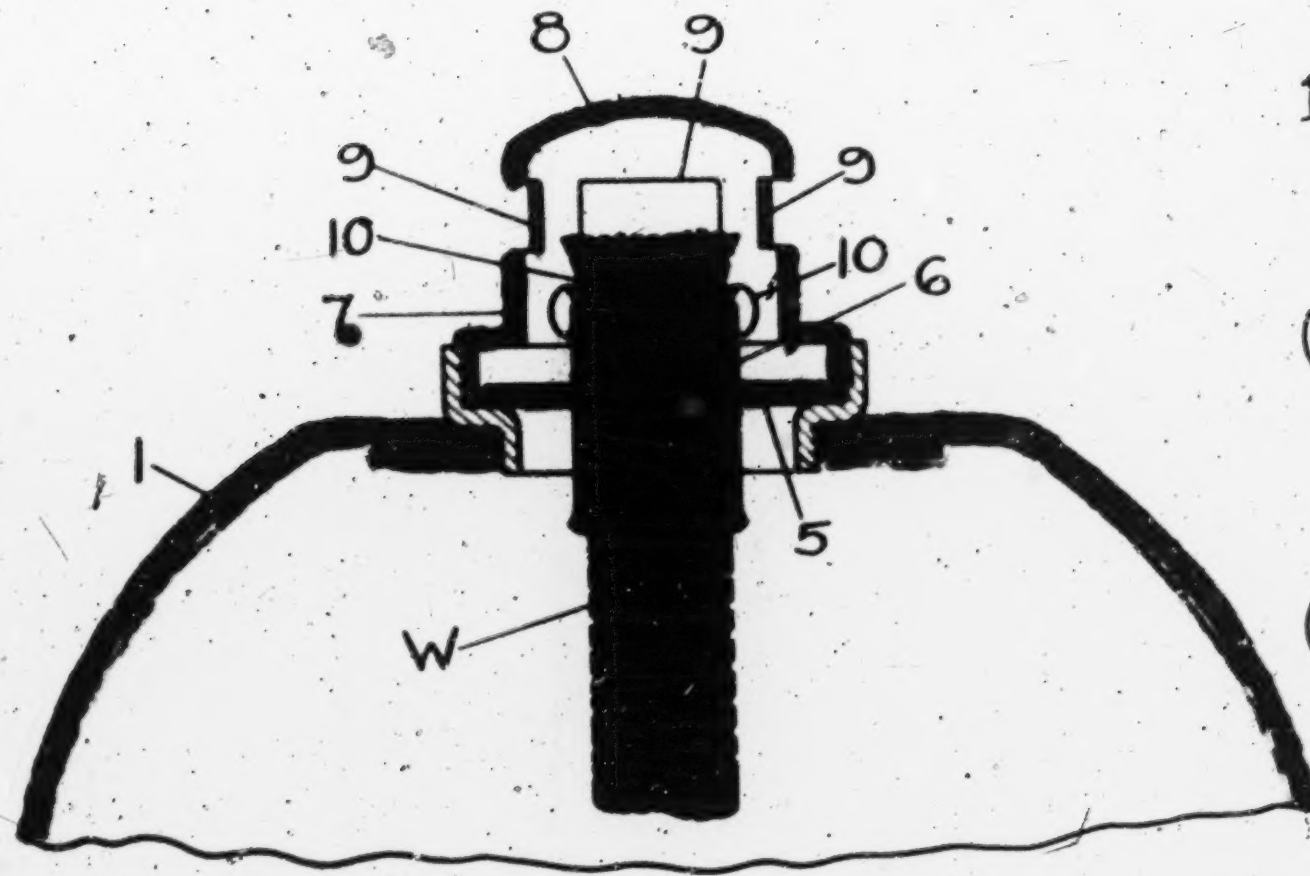
# CONTENTS:

732700.

1. Application	2. <i>major</i>	26.
2. Application	JUL 24 1929	27.
3. Application	SEP 9 1929	28.
4. Notice of Suit	Nov. 18 1929	29.
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25.		50.



FIG. 3 OF PATENT IN SUIT



2. In a device of the class described,  
 (a) a torch body (1) having an opening for a wick W,  
 (b) and a flame guard (7) for said wick mounted on the outside of said torch body, said guard including a cap provided with an imperforate top wall (8) and lateral flame openings (9) adapted to emit a luminescent flame, and air ports (10).

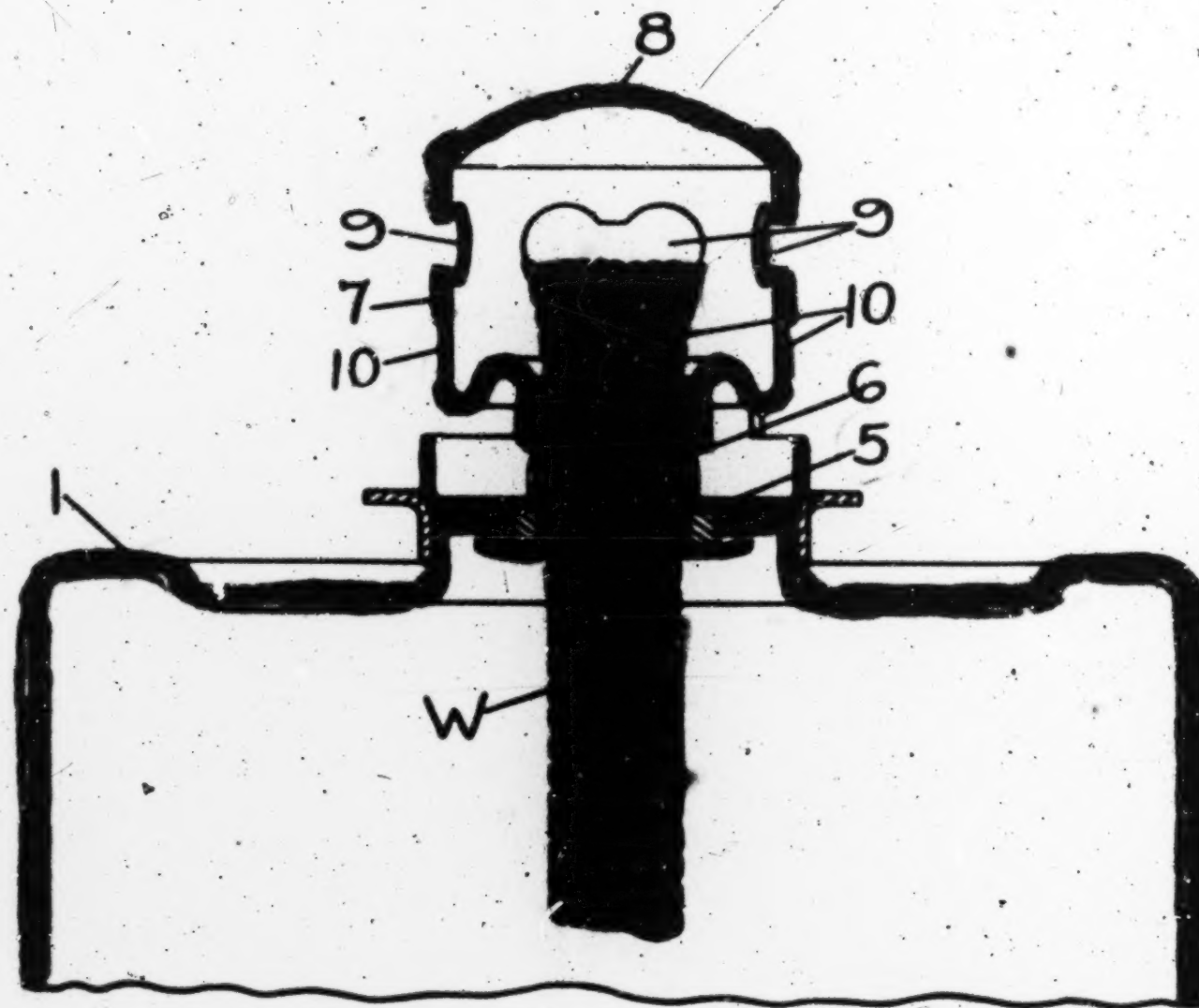
11. A burner for a construction torch adapted to emit a luminescent flame and comprising  
 (a) a wick holder (6) having a portion in contact with the wick and a supporting and heat receiving flange (5),  
 (b) and means (7) enclosing a space above said flange and surrounding the wick, except for provision (9) for lateral exit of flame and restricted entrance of air (10) for combustion.

**PLAINTIFF'S EXHIBIT 2-A**

**Drawing — Figure 3 of Patent in Suit — With Terms of  
Claims 2 and 11 Applied**

# DEFENDANTS TORCH IN CASE 1408 (BOLSER)

2. In a device of the class described,
- (a) a torch body (1) having an opening for a wick (W)
  - (b) and a flame guard (7) for said wick mounted on the outside of said torch body, said guard including
    - a cap provided with an imperforate top wall (8)
    - and lateral flame openings (9) adapted to emit a luminescent flame,
    - and air ports (10).



11. A burner for a construction torch adapted to emit a luminescent flame and comprising
- (a) a wick holder (6) having a portion in contact with the wick and a supporting and heat receiving flange (5),
  - (b) and means (7) enclosing a space above said flange and surrounding the wick, except for provision (9) for lateral exit of flame and restricted entrance of air (10) for combustion.



**161.**

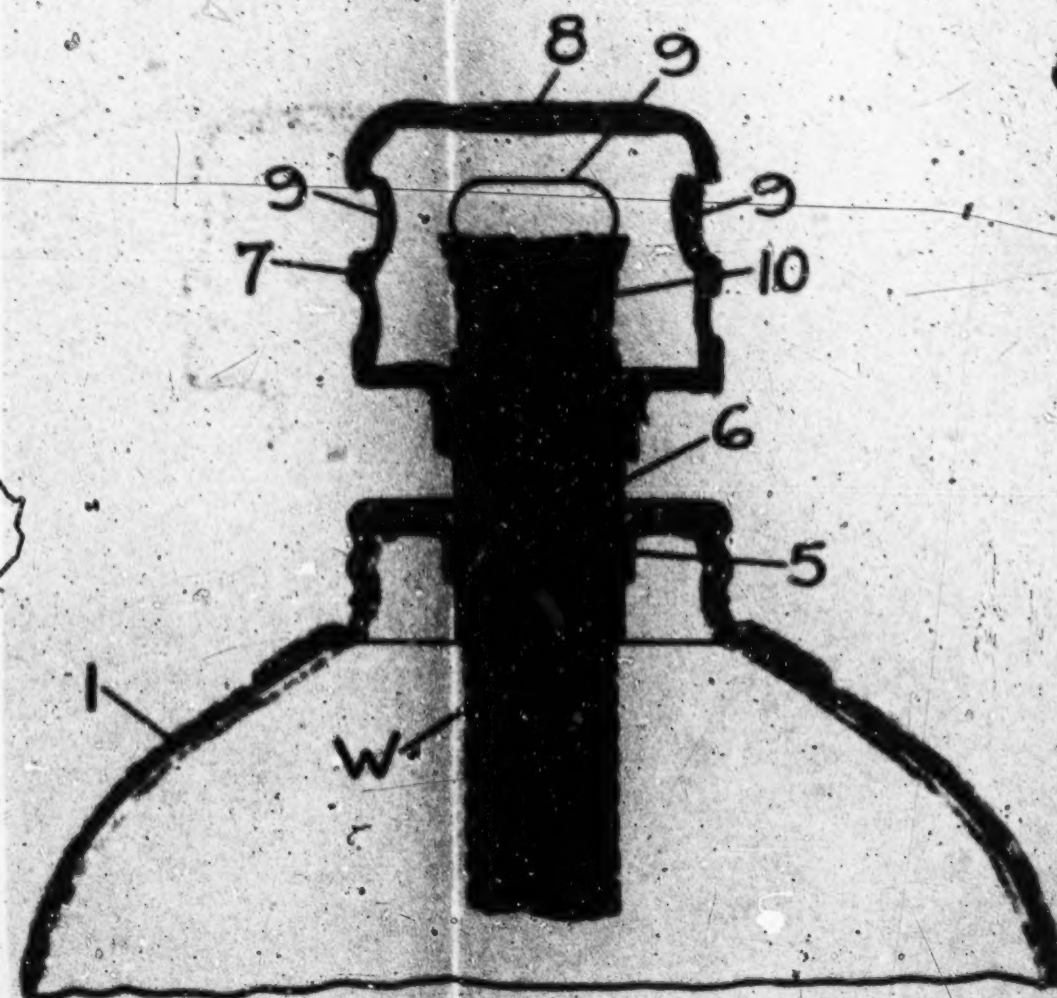
**PLAINTIFF'S EXHIBIT 2-B**

**Drawing of Defendant's Torch in Equity 1408 (Bolser)  
With Claims 2 and 11 Applied**



# DEFENDANTS TORCH IN CASE 1412 (K-K)

2. In a device of the class described,  
 (a) a torch body (1) having an opening for a wick (W),  
 (b) and a flame guard (7) for said wick mounted on the outside of said torch body, said guard including a cap provided with an imperforate top wall (8) and lateral flame openings (9) adapted to emit a luminescent flame, and air ports (10).



11. A burner for a construction torch adapted to emit a luminescent flame and comprising  
 (a) a wick holder (6) having a portion in contact with the wick and a supporting and heat receiving flange (5),  
 (b) and means (7) enclosing a space above said flange and surrounding the wick, except for provision (9) for lateral exit of flame and restricted entrance of air (10) for combustion.



**PLAINTIFF'S EXHIBIT 2-C**

**Drawing of Defendant's Torch in Equity 1412 (Kari-  
Keen) With Claims 2 and 11 Applied**

**PLAINTIFF'S EXHIBIT 4**

**163**

**Circular of Plaintiff's First Flame Torch—(4 Pages)  
Extending Into Fuel Tank**

**THE TOLEDO PRESSED STEEL CO.**

**TOLEDO, OHIO**

CASE NO. 1408 1412  
PLAINTIFF'S EXHIBIT  
No. 11



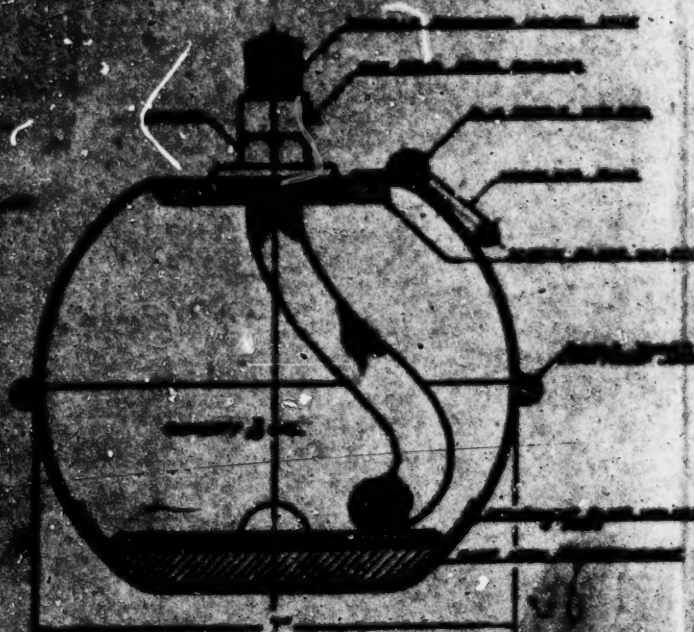
**2**

## THE TOLEDO TORCH

THE TOLEDO TORCH is an improved, open flame warning signal for use at night on all street and highway obstructions.

### ITS CONSTRUCTION

The main body is composed of two pressed steel hemispheres, with flanged ends. These are joined together with a double seamed, leak-proof joint, making one complete sphere.



The bottom contains a cast iron counterweight electrically welded to place. The top is provided with a one-piece burner which carries the flame. This burner has a large filling hole, in a heavy screw plate, which is the double nature of the shell.

A large top of convenient size and position is provided for easy

removal of the burner and the shell is a double flanged mah-

...the upper part of the shell is made of a heavy material and the lower part of the shell is made of a lighter material. The shell is made of a heavy material and the lower part of the shell is made of a lighter material. The shell is made of a heavy material and the lower part of the shell is made of a lighter material.



### ITS USE

Due to the counterweight in the bottom, **THE TOLEDO TORCH** is self righting. It can, therefore, be placed at any point in an obstructed road without support, and does away with all supplementary barricades.

It is placed directly in holes in the pavement or between tracks, or along the edge of large holes, ditches, or any obstruction that should be guarded.

Among the most important advantages are, first greater protection of the job, the public and yourself; second, greater economy in use and maintenance; and third elimination of the theft hazard, both of the warning signal itself, and of the present about the job.



### THE ADVANTAGES TO YOU

Thousands of users of this improved protection, testify to the reality of these advantages.

The open flame illuminates and shows what the obstruction is.



This flame can be seen from a great distance and gives a timely warning. It is not mistaken for automobile tail lights, or other incidental lights that appear at the street, and it carries a message of universal understanding.

Being made of pressed steel the torch is unbreakable. There are no globes to clean or replace. Its maintenance is reduced to simply filling with oil and adjusting the wick.

With proper handling, wicks will last for many months of constant use. When a wick becomes too short to reach the bottom of the tank it should be replaced with a new standard wick which can be secured direct from us or through our distributor.

THE TOLEDO TORCH can be operated on any kind of burning oil, from light furnace oil to lard oil. Economy can be effected through the use of the cheaper grades.

THE TOLEDO TORCH is adaptable to only one use, namely, protection at night on construction work, and is therefore not subject to theft.

### WHY IT IS SAFE TO USE THE TOLEDO TORCH

Being self-righting the flame of the TOLEDO TORCH is always on top. It cannot tip over and ignite inflammable material. The self-righting action returns it to location when bumped accidentally by vehicles. The large wick assures a vigorous flame which withstands wind and rain.

That the completeness of its performance more than fulfills the spirit of requirements of state or municipality codes, regarding protection of road obstructions, is attested by the ever increasing use of them on public work by highway commissions and engineers.

### THE PRICE OF THE TOLEDO TORCH

Extensive use with increased production has permitted us to reduce the price of this necessity to \$1.50 each, \$18.00 per dozen or \$200.00 per gross, F. O. B. Toledo, Ohio. Prices of larger quantities will be furnished on application.

Additional wicks, cut and ready for use may be secured direct from us post paid, or through our distributors at \$.15 each, \$1.80 per dozen.

Every time you buy any other kind of warning signal, you are paying for a TOLEDO TORCH. Why not have the TOLEDO TORCH when you pay for it, and eliminate further purchases?

Some one near you is probably using TOLEDO TORCHES now. If you have seen them our address is all you need. If you have not seen them, a trial dozen will prove a revelation to you.

**ORDER NOW** while the thought is in your mind.

## The Toledo Pressed Steel Co.

124 STREET & WOODRUFF AVE.

Toledo, Ohio

**PLAINTIFF'S EXHIBIT NO. 6****(Filed May 10, 1935)**

(Yellow Tag sent out by plaintiff with old torches  
recommending 1½ inch wick exposure)

**THE TOLEDO TORCH**

A normal length of exposed wick is about 1½ inches.  
Extend the wick further for heavy weather conditions.

---

Do not spread or trim the wick.

**THE TOLEDO PRESSED STEEL CO.****TOLEDO, OHIO**

(Reverse Side):

**THE TOLEDO TORCH**

It is not necessary to entirely remove the wick when  
lighting.

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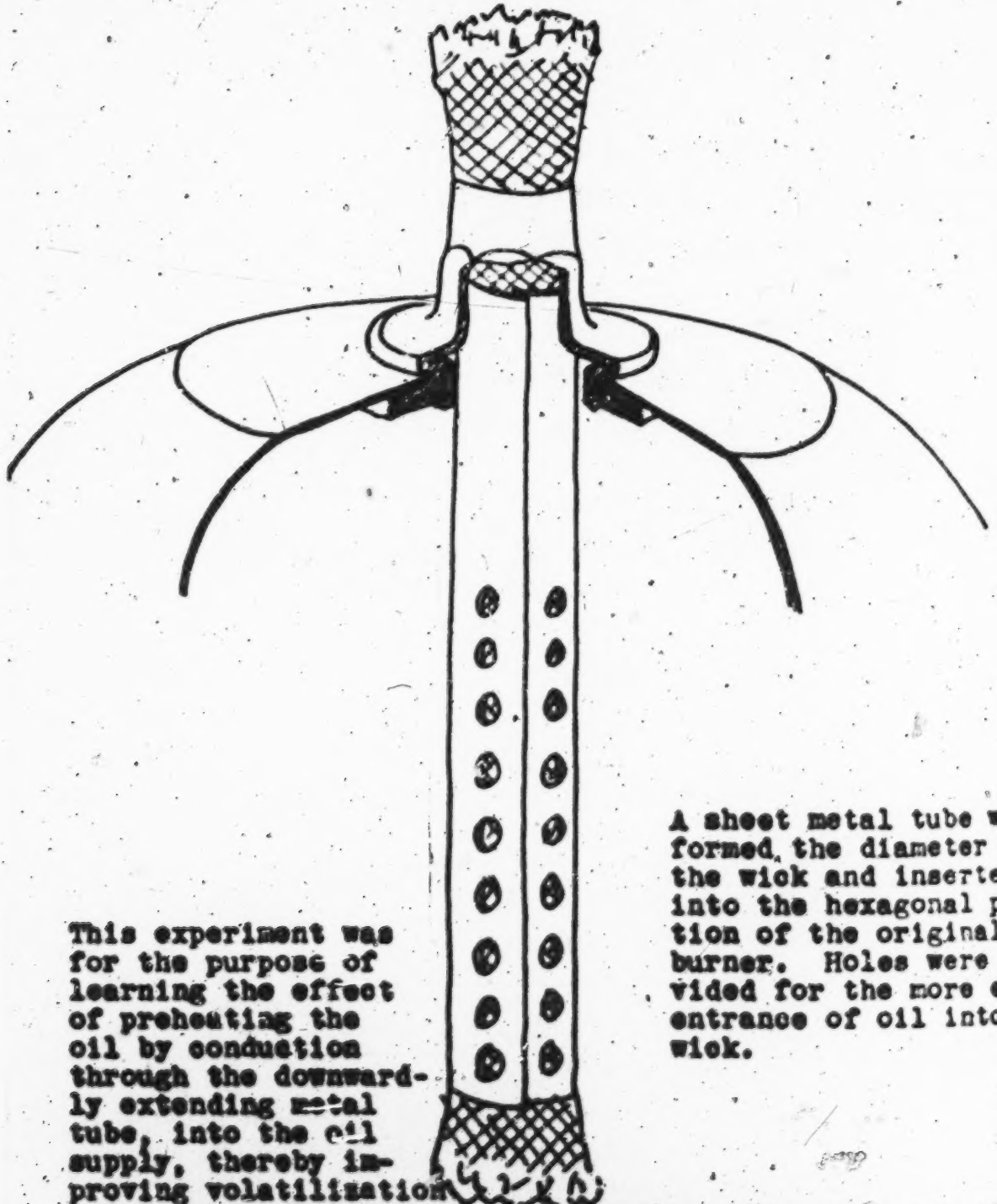
Use good oil. A light furnace oil of good burning  
quality or a good grade of kerosene should be used.

**THE TOLEDO PRESSED STEEL CO.****TOLEDO, OHIO.**



## PLAINTIFF'S EXHIBIT 7

## Sketch Showing Experimental Burner with Long Tube



This experiment was for the purpose of learning the effect of preheating the oil by conduction through the downwardly extending metal tube, into the oil supply, thereby improving volatilization

and consequently improving combustion and making the flame more reliable in cold and windy weather.

It had merit but was impractical to produce. This taught us that preheating oil was desirable.

A sheet metal tube was formed, the diameter of the wick and inserted into the hexagonal portion of the original burner. Holes were provided for the more easy entrance of oil into the wick.

**PLAINTIFF'S EXHIBIT 8**

**Part of Circular Showing Open Flame Torch on Which Plaintiff Went Into Production in 1928. Actual Device is Shown in Physical Exhibit 29.**

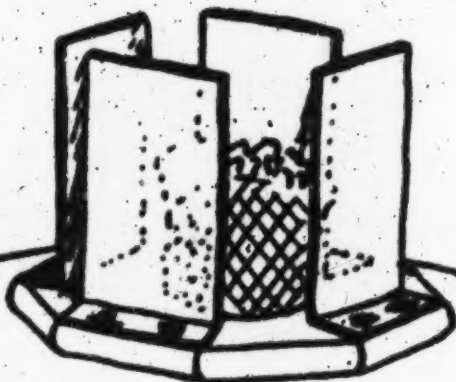
# IMPROVED BURNER

All TOLEDO TORCHES are now equipped with a burner which greatly improves its performance. No projecting parts to break. In-

sure constant flow of oil at right temperature. Correct length of wick projection always assured. Prevents backslippage and loss of wick inside of torch. Interchangeable with all previous models. The secret of all-weather dependability.



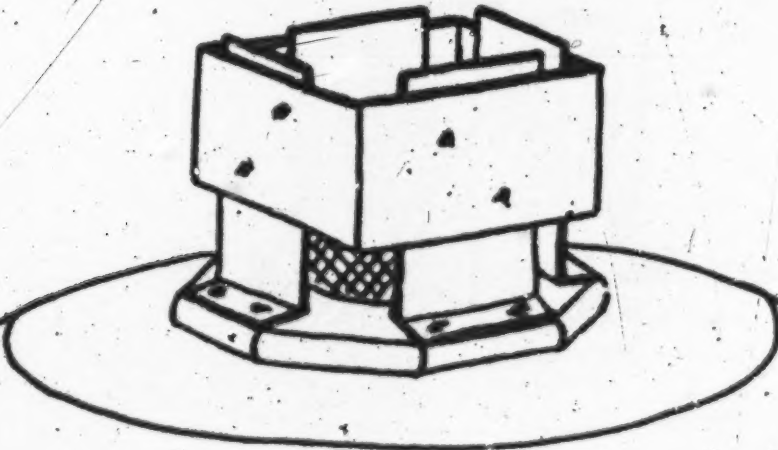


**PLAINTIFF'S EXHIBIT 10-A****Drawing of Experimental Torch Tried by Plaintiff**

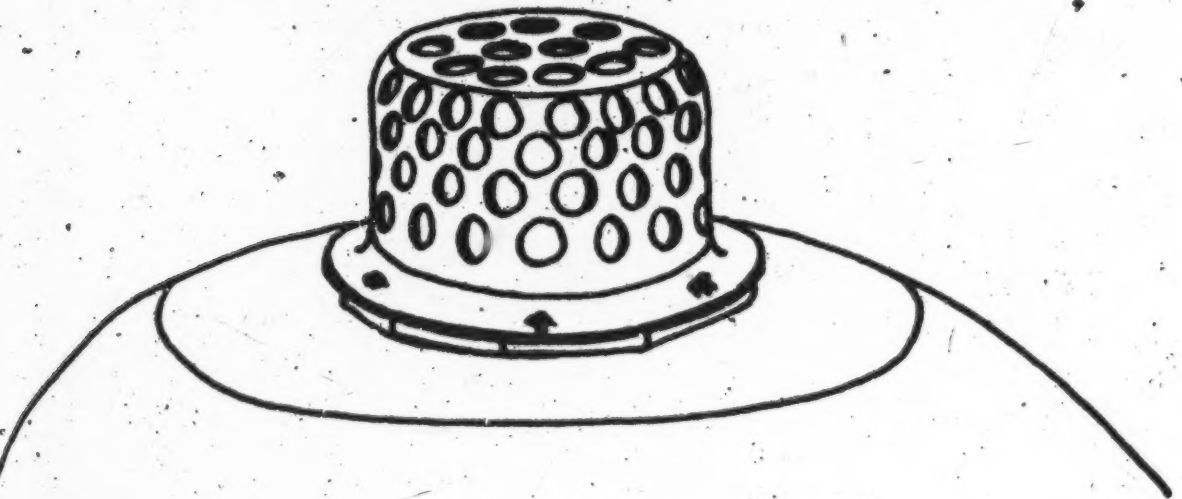
Sheet metal angles were formed up with one short leg and one long one. The Short leg was spot welded to the top of the flat type burner in such a position to form with the long leg of each angle, a portion of a series of baffles surrounding the wick.

The illustration shows four of these used. Similar tests were made with three, five and six angles arranged in a similar manner to that shown above.

**PLAINTIFF'S EXHIBIT 10-B**  
**Drawing of Experimental Torch Tried by Plaintiff**



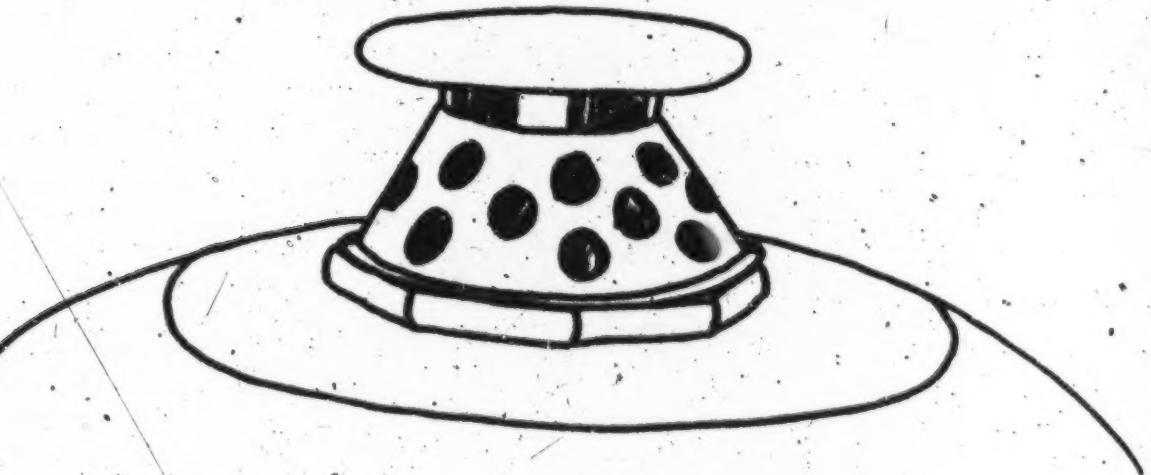
To prevent the easy extinguishing of the flame by the wind when simply straight pieces of metal were placed about the wick, a band around them was tried out. It was an improvement but not practical to make.

**PLAINTIFF'S EXHIBIT 10-C****Drawing of Experimental Torch Tried by Plaintiff**

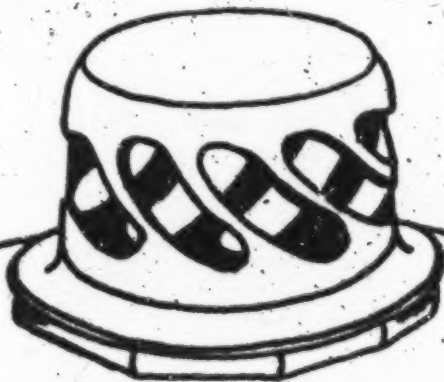
A cap was made of suitable size to fasten to the top of the flat type burner and was drilled full of holes as shown.

Tests proved the merit of enclosing the wick in such a manner but further improvement was necessary to improve ability to withstand rain and wind.

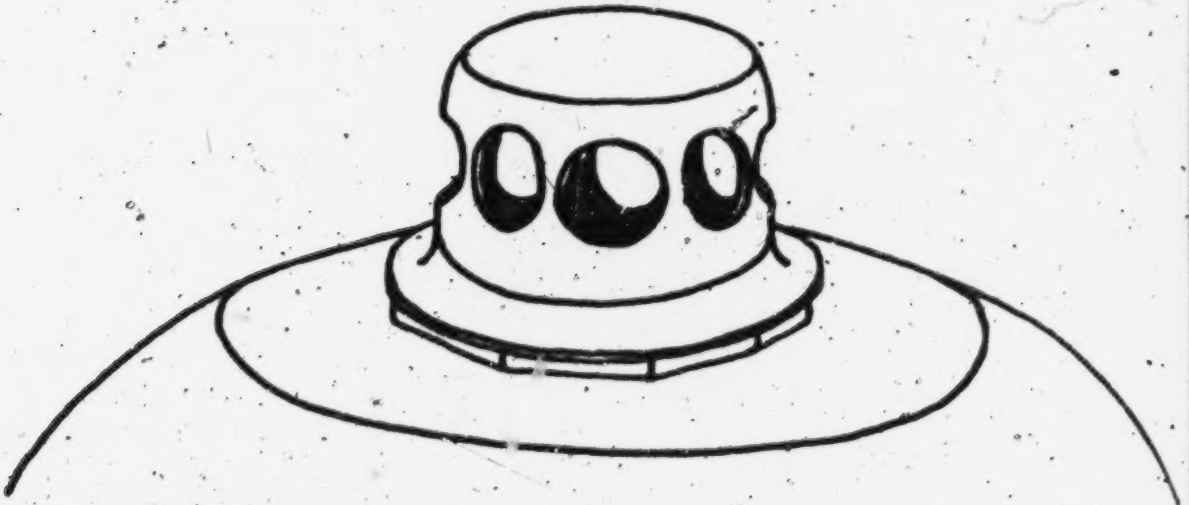


**PLAINTIFF'S EXHIBIT 10-D****Drawing of Experimental Torch Tried by Plaintiff**

A tapered shell with perforations of several different arrangements was covered by a flat disc attached to it to fend off rain.

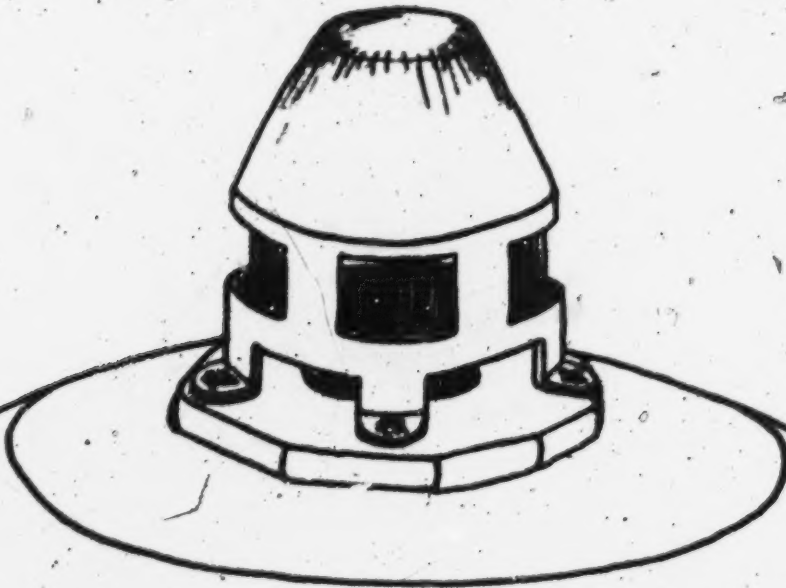
**PLAINTIFF'S EXHIBIT 10-E****Drawing of Experimental Torch Tried by Plaintiff**

Many caps of shape similar to that shown above were constructed, using different arrangements of perforations and slots in an effort to secure the best results.

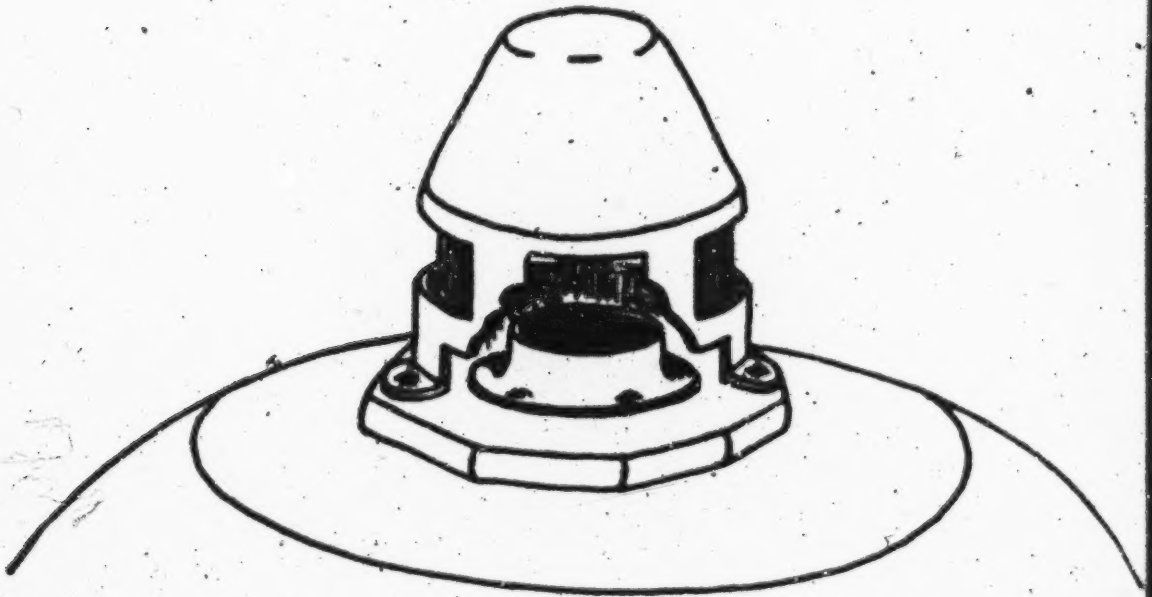
**PLAINTIFF'S EXHIBIT 10-F****Drawing of Experimental Torch Tried by Plaintiff**

Drilled holes in many different arrangements were experimented with, in addition to sawed and filed slots.

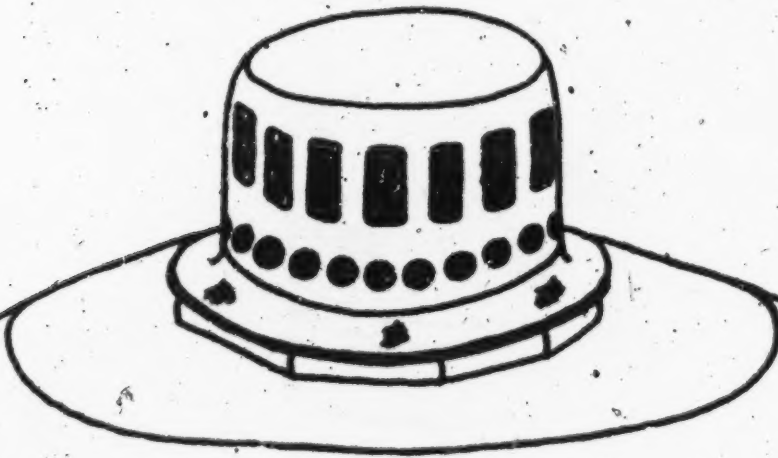


**PLAINTIFF'S EXHIBIT 10-G****Drawing of Experimental Torch Tried by Plaintiff**

Tapered shells as well as straight ones, with special attention to the shape and size of the dome above the openings, were made and attached to the flat top burner. This one with four legs attached, was affixed in position allowing an opening below the shell for the entrance of air. It demonstrated the need for secondary protection inside for the wick.

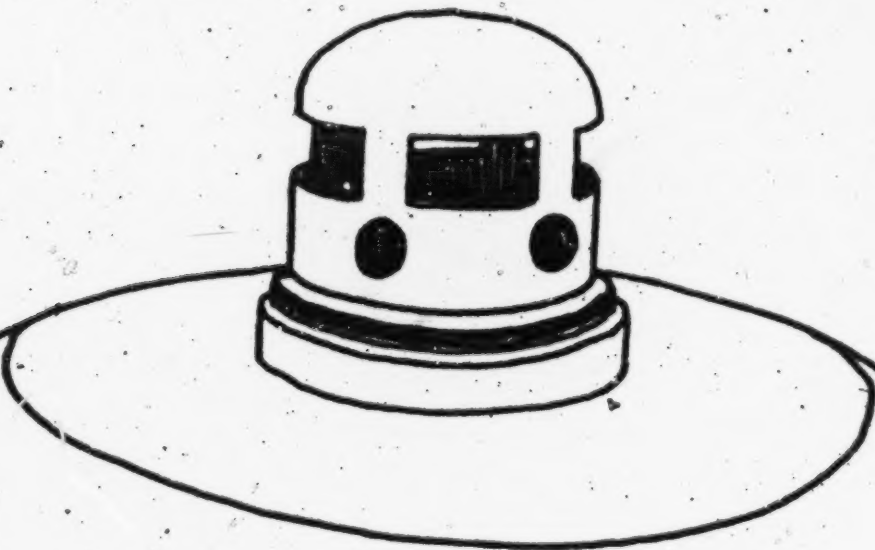
**PLAINTIFF'S EXHIBIT 10-H****Drawing of Experimental Torch Tried by Plaintiff**

The cutaway section shows the wick holder collar which was introduced as secondary protection inside the shell for the wick. Previous tests were repeated with a wick holder of this sort used in addition to the outer shells.

**PLAINTIFF'S EXHIBIT 10-1****Drawing of Experimental Torch Tried by Plaintiff**

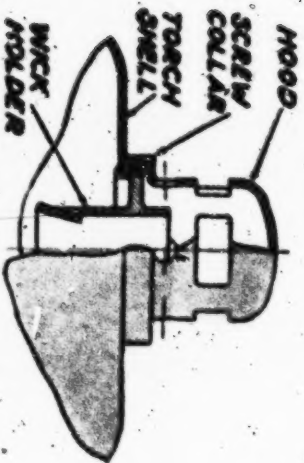
The results previously obtained led to a consistent series of experiments with various arrangements of lower holes for the entrance of air and upper holes for the exit of the flame, and the use of a wick holder inside, adjusted at various heights.



**PLAINTIFF'S EXHIBIT 10-J****Drawing of Experimental Torch Tried by Plaintiff**

To facilitate better application of wick holder and make possible more consistent results, a screw collar and hood were turned up out of copper in substantially the shape and size shown above. Subsequent hoods turned up out of steel with various arrangements of holes and heights of wick holder resulted in the design and proportions of the present Economy Burner.

# Only the TOLEDO has the efficient Economy Burner



Cross-section drawing showing the simple assembly of the Economy Burner. Easily handled by inexperienced labor.

**M**ORE than three-quarters of the state highway departments in the United States, hundreds of cities and public utilities and thousands of contractors have eliminated worry about traffic signals, have protected their liabilities and are *saving* money with "Toledo" Torches.

No other torch has the flashing, storm-proof, fuel-saving Economy Burner in so perfected a form.

## 50% Fuel Saving

The Economy Burner reduces oil consumption by *one-half*—it makes the Toledo Torch the most economical torch in existence.

## No Wick Consumption

The cost of wicks—the labor cost of renewing them—are reduced to a negligible item. We guarantee our standard 18-inch wick, supplied with every torch, to give constant satisfactory service for a whole year.


## Other Economies

The Economy Burner prevents the wick from "bleeding" oil when first lighted. It prevents wick damage. It produces a flashing flame—a protection in light.

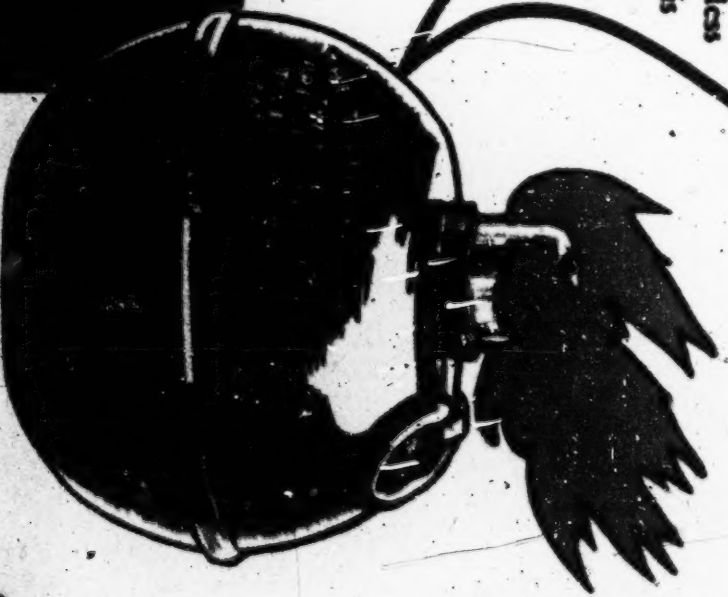


Screw Collar Adapter

For use in fitting Economy Burner to old style torches. If you have older models of torches, modernize them by applying Economy Burners. All burner parts may be obtained separately. We sell extra wicks at cost.

 **The Toledo Pressed Steel Co.**  
TOLEDO OHIO  
*Saves with Steel*

It isn't a genuine  
"TOLEDO" unless  
this name is  
embossed  
on the  
side



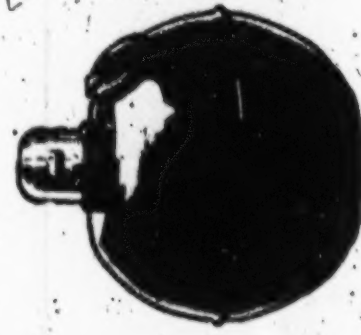


**PLAINTIFF'S EXHIBIT 11-A**  
**Circular of Plaintiff's Construction Torch**  
**Embodying Patented Burner in Self**

**BETTER VALUE**  
 they are  
 because  
**MORE YOU SEE**

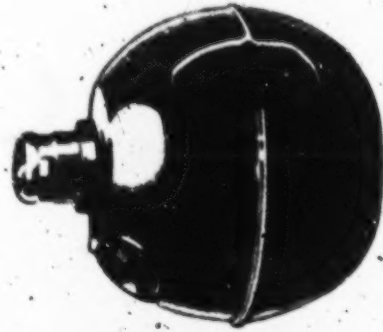


"LEADER"



The "Leader": self-righting; capacity 3 quarts; Economy Burner; burns up to 48 hours on one filling; made of 20-gauge steel; halves joined by strong, double-seamed joint; black baked enamel finish; weight 5 1/2 pounds; packed 1/2 dozen per box.

"CHAMPION"

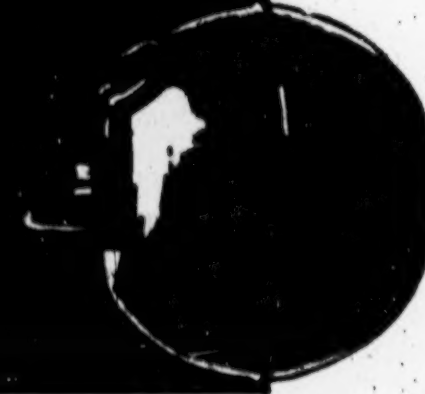


The "Champion": self-righting; capacity 3 quarts; Economy Burner; burns up to 48 hours on one filling; made of 15-gauge steel; halves welded together; black baked enamel finish; weight 6 1/2 pounds; packed 1/2 dozen per box.

MODEL



Designed especially for use of common carrier motor vehicles, which are required to carry torches for emergency stops at night. Approved and recommended by Public Utilities Commissioners. Even more efficient than any other torch.



*Here are six reasons why 150,000 "Toledo" Torches are illuminating traffic hazards on highways—more than all other makes of torches combined:*

1 A compelling warning instantly seen and understood by everyone. A flashing yellow flame—the color of all modern caution lights. You simply can't get by a "Toledo" Torch without seeing it.

"Better than lanterns as a public safeguard—seen a greater distance—much more conspicuous." S. K. Jones Const. Co., Memphis, Tenn.

2 They always burn—neither wind nor rain will quench them. The harder it blows the better they burn.

"Never found them not burning in the morning, in spite of severe storms at night." F. A. Flannagan, Shawnee County Highway Dept., Topeka, Kan.

3 They're unbreakable. Their first cost is the only cost.

"No globes to get broken—we are well satisfied with Toledo Torches." Globe Const. Co., Wichita, Kansas.

4 They right themselves from any position—can't tip over—they are nimbly in avoiding wheels.

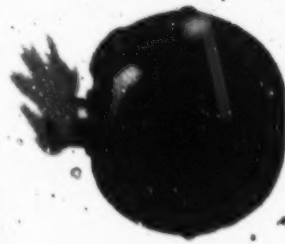
"They're right there all night, every night. We fill 'em, light 'em and forget 'em." A. K. Erb, State Road Commissioner, West Virginia.

5 Foolproof and theft-proof — they're never stolen.

"Foolproof—we have no reports of any of these lights being stolen." Ticus Bros., Waynesville, N. C.

6 Economical—burn only half as much fuel as other torches. Wick consumption almost nothing.

"There is nothing on the market to equal the Toledo Torch." Roy H. Schultz, County Surveyor, Paulding, Ohio.



No other torch offers the economical, sure-fire protection that you get with the genuine **TOLEDO**.

**1500 TORCH TALLEY ECONOMY BURNER**

**Directly**



## Read Directions Carefully

Before starting to operate the TOLEDO TORCH with the ECONOMY BURNER, remember that it operates on a principle, entirely different from all other torches. If you have never operated torch safety lights, you will have nothing to forget. If you are an old torch user, don't try to apply your past experience in operating this new Toledo Torch.



HOOD

SCREW COLLAR

TORCH SHELL

WICK HOLDER

Instead of burning the oil directly, as in all other torches, this new Toledo Torch burns a mixture of air and oil vapor. The oil is vaporized by the heat generated by the flame, which is reflected and retained by the hood. The mixture is secured automatically in all other torches, an extremely large flame is necessary to give a fair degree of resistance to heavy weather conditions. A large flame means extravagant use of oil and rapid burning of the wick.

Therefore, in designing the Economy Burner, we sought to utilize the smallest flame consistent with the requirements of adequate protection, in order that the minimum amount of oil might be consumed. To satisfactorily utilize this flame, a hood properly designed to make it proof against wind and rain is provided. Incidentally the hood furnishes the mixing chamber where a proper mixture is automatically maintained for all varying weather conditions.

To put the Toledo Torch into operation:

### 1 Remove the Hood From the Torch.

In its original package the new Toledo Torch will probably come to you with the hood screwed into the screw collar, in an inverted position, with the wick holder loose.

### 2 Fill The Torch With Good Kerosene.

The torch should be filled to within about one-half to three-quarters of an inch from the top. Kerosene is recommended because of its superior vaporizing properties.

### 3 The Wick Should Project About $\frac{1}{8}$ of an Inch.

Before inserting the wick, see that it projects above the wick-holder not more than about  $\frac{1}{8}$  of an inch. This is to allow the loose ends of the projection. The lower, or longer portion of the wick-holder is provided with a prong which prevents downward movement of the wick. A twisting movement of the wick will effect the adjusting of the wick to the proper point. A very slight difference in this adjustment may make a large difference in the amount of oil consumed, so care should be taken at this point.

### 4 Insert The Wick Into The Torch.

It is well to dip the top of a new wick into the oil to insure saturation. Then insert the long end of the wick into the torch gradually, so as not to cause the oil to overflow before it is absorbed by the wick. Give it a twisting motion so it will lay out in the torch and permit the wick-holder to seat properly. A new wick before it is used will be relatively stiff and prevent flush seating of the wick holder, before the addition of the hood. After use this condition will be corrected.

### 5 Attach The Hood.

Screw the hood into the screw-collar until it seats firmly against the wick-holder flange.

### 6 Ignite the Oil on the Wick Through a Flame-Port.

The hood has four small round holes placed adjacent to the flange, and four larger rectangular holes placed above them. The round holes are the air-intakes. The rectangular holes are the flame-ports. If the torch is lighted indoors, the flame presented will appear very weak and can easily be blown out. The flame, presented will appear at night, and what may appear to be a very insufficient signal by day, will probably prove wholly adequate when seen against the black background of night. Therefore, before adjusting the wick higher for a larger flame, see it first during the night period, on the job. If the torch is lighted out-of-doors in a strong wind, a waste or wick lighter may prove convenient. Light the torch from the windward side and give it protection until the hood becomes properly heated. Remember, it is reflection of this heat from the hood, that vaporizes the oil, and the vaporization must be properly started to insure continued satisfactory performance. Of course vaporization starts more slowly in cold weather than it does in warm weather, but in any event it should start properly in a few seconds. In lighting the torch the second or third time without refilling, it may require slightly longer to get the vaporization properly started due to a lower oil level.

### 7 To Extinguish The Flame Either Blow It Out Or Smother It.

Usually the flame may be extinguished by blowing sharply and slightly downward through one of the flame-ports at close range. If this does not accomplish results, smother the flame by completely covering the holes in the hood with a gloved hand, a rag, or a small cup or can.

### 8 Clean Off The Carbon.

In normal operation a deposit of carbon will be observed on the hood's wick and wick-holder. This serves a useful purpose in insulating against heat radiation, but to avoid a surplus, the parts, including the tip of the wick, should be cleaned before the next period of use. This can best be accomplished by removing the hood, when the carbon can be wiped off with ease. For best results the air-intakes should be clear.

In refilling the torch it is a good practice to blow the bits of carbon off the top of the wick-holder before uncapping and then, when refilling, to prevent dropping the carbon into the oil chamber. Also it is good practice now and then, when refilling, to first empty the torch completely of its contents to get rid of water and other residue which may remain from the oil which has been used.

## Directions for Adapting the ECONOMY BURNER To Old Toledo Torches

The Economy Burner may be adapted to any Toledo Torch we ever made.

### 1 Remove Old Burner and Wick. 3 Take The Economy Burner Apart.

### 2 Empty Torch Of All Contents. 4 Screw The Adapter Into The Torch.

Place the copper gasket provided, on top of the torch over the filling hole with the flat side up. Insert the screw-collar adapter and seat tightly with a pipe wrench, taking care not to distort its circular shape.

Your old Toledo Torch is now converted to the new type and you may proceed to operate it as described above, for new Toledo Torches equipped with the Economy Burner. The only difference in results will be a slightly shortened burning period for one filling. This is due to an increase in heat transmitted by a slightly larger mass of metal which is present in the adaptation of the Economy Burner to the old torch.

If you have followed these directions carefully you will be surprised with the results obtained. You will experience a saving of more than fifty percent over other torches, in oil consumption. You will not have to replace a wick in less than a year. If you do, we will furnish a new one without charge. If you have any difficulty due to faulty material or workmanship, we will replace the defective torch without charge when returned to us, prepaid. But best of all, you will be protected at all times and through all weather with a safety light that is truly reliable and always understood.

**The Toledo Pressed Steel Company, Toledo, Ohio**

**182**

**PLAINTIFF'S EXHIBIT 11-B**

**Plaintiff's Direction Sheet for Burner in Suit**

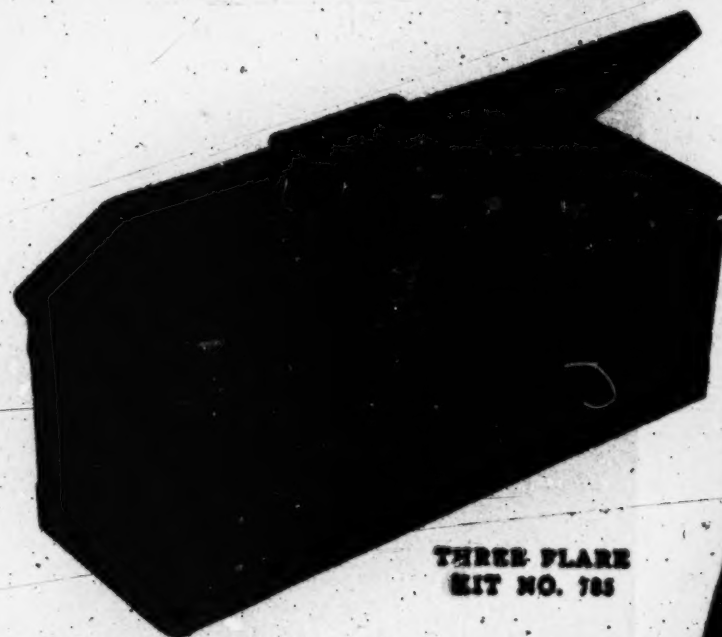


# Toledo Truck Flares

## Invite Comparison

Comparison with all other flares on the market — not only over the counter, but after they have both been in service — will show how much stronger and simpler Toledo Truck Flares are constructed — how much better they do their job. No other flare kit so perfectly meets all legal requirements and suits your own convenience. You can carry it by the handle, fasten it to the floor or running board or attach it to the wall in either a horizontal or vertical position. In each case the flares fit the case perfectly, are fully enclosed, and can be securely locked against theft.

Toledo Truck Flare Kits are supplied in two-flare and three-flare units in a heavy steel, black enamelled case of appropriate size, equipped with a handle and spring steel locking device. Each flare is equipped with the same fully patented Economy Burner that has given our torches eight full years of well-earned popularity — Toledo Flares are simple to operate, easy to clean and always dependable in any kind of weather. Their use is your best insurance against accidents and delay. The illustrations at the left suggest their many conveniences in application.



THREE FLARE  
KIT NO. 785

Each Toledo Flare uses the entire volume of the reservoir for fuel—no space sacrificed for trick features. Capacity  $2\frac{1}{4}$  pints. Burning time up to 16 hours per filling. The flares are finished in high grade baked red enamel. The burners are cadmium plated. High grade flags with holders to fit the burner, using the flare as a base, complete this compact and convenient outfit—the last word in value.

TWO FLARE  
KIT NO. 751



A knock-out hole in each corner of the bottom of the case is provided for attachment to the truck.

The view at the left shows the application of the combination muffler-spacer, which is used when attaching the kit to a vertical position on the side of the truck body. These are supplied without extra charge where required.

**THE TOLEDO PRESSED STEEL CO.**  
TOLEDO, OHIO

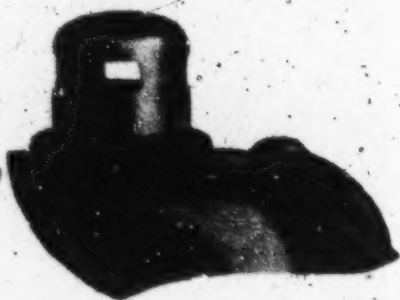


**183**

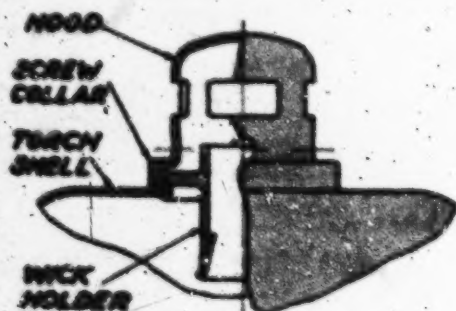
**PLAINTIFF'S EXHIBIT 11-C**

**Plaintiff's Truck Flare Circular**

Be sure the torch you  
 buy has  
 this  
**Economy  
 Burner**



This is a feature on Toledo Torches  
 fully covered by patents in United States  
 and Canada. Insist on the genuine Economy  
 burner, found on the Model F, special one  
 dollar Toledo Torch.



Extra Hoods ..... \$0.15 each  
 Extra Wick Holders ..... .15 each  
 Extra Wicks ..... 1.50 doz.

*Manufactured only by*

**The Toledo Pressed Steel Co.**  
 TOLEDO, OHIO

And now <sup>184</sup>          

*A Special*

**TOLEDO  
 TORCH**

for bus and truck  
 operators

*for only*

**\$1<sup>00</sup>**

F. O. B. TOLEDO, OHIO

**PLAINTIFF'S EXHIBIT 15**

**Circular Showing Letter from Mich-  
 igan State Highway Commissioner**

## Greater Safety

is the object of the recent ruling by the Michigan Public Utilities Commission, which requires all trucks and busses operating in Michigan at night, to carry two oil burning torches, to be placed around the vehicle when it stops on the highway.

To enable operators to meet these requirements inexpensively, we offer this special one dollar torch, known as our Model F.

It's just as fine a piece of work as any of our regular torches and a piece of equipment you will be proud to own.



**Price \$1.00**

F. O. B. Toledo, Ohio

The height has been reduced to make it easy to store away in limited space. If you prefer to carry it hanging, there are two convenient rings for this purpose, or you may provide a board with holes large enough to fit snugly around the bottom section.

This torch is equipped with our patented Economy Burner. You must have this sort



**PLAINTIFF'S EXHIBIT NO. 17.**

(Filed May 10, 1935)

**TEST RUN ON ROOF OF OUR BUILDING  
FROM 8:25 A. M. TO 5:05 P. M., 4/12/35**

Each of four torches was filled and adjusted in the manner recommended for practical use under weather conditions.

## 1 Using old style burner:

At beginning of period weight.....	9 lbs., 11 oz.
At end of period weight.....	7 lbs., 10 oz.
Oil consumption .....	2 lbs., 1 oz.

## 2 Truck Flare using Economy Burner:

At beginning of period weight.....	4 lbs., 3 oz.
At end of period weight.....	3 lbs., 1 oz.
Oil consumption .....	1 lb., 2 oz.

## 3 Bolser Flare:

At beginning of period weight.....	3 lbs., 9 oz.
At end of period weight.....	2 lbs., 0 oz.
Oil consumption .....	1 lb., 9 oz.

## 4 K-K Flare:

At beginning of period weight.....	2 lbs., 5 oz.
At end of period weight.....	1 lb., 1 oz.
Oil consumption .....	1 lb., 4 oz.

**TEST RUN ON ROOF OF OUR BUILDING  
FROM 8:00 A. M. TO 5:30 P. M., 4/15/35**

Each of four torches was filled and adjusted in the manner recommended for practical use under weather conditions.

## 1 Using old style burner:

At beginning of period weight.....	9 lbs., 12 oz.
At end of period weight.....	6 lbs., 15 oz.
Oil consumption .....	2 lbs., 13 oz.

## 2 Truck Flare using Economy Burners:

At beginning of period weight.....	4 lbs., 2 oz.
At end of period weight.....	3 lbs., 0 oz.
Oil consumption .....	1 lb., 2 oz.

## 3 Bolser Flare:

At beginning of period weight.....	3 lbs., 9 oz.
At end of period weight.....	1 lb., 15 oz.
Oil consumption .....	1 lb., 10 oz.

*Plaintiff's Exhibit No. 17.***4# K-K Flare:**

At beginning of period weight.....	2 lbs.,	5 oz.
At end of period weight.....	1 lb.,	0 oz.
Oil consumption .....	1 lb.,	5 oz.

**TEST RUN ON ROOF OF OUR BUILDING  
FROM 8:45 A. M. TO 6:00 P. M. 4/16/35**

Each of four torches was filled and adjusted in the manner recommended for practical use under weather conditions.

**#1 Using old style burner:**

At beginning of period weight.....	9 lbs.,	13 oz.
At end of period weight.....	6 lbs.,	15 oz.
Oil consumption .....	2 lbs.,	14 oz.

**#2 Truck Flare using Economy Burner:**

At beginning of period weight.....	4 lbs.,	4 oz.
At end of period weight.....	3 lbs.,	4 oz.
Oil consumption .....	1 lb.,	0 oz.

**#3 Bolser Flare:**

At beginning of period weight.....	3 lbs.,	9 oz.
At end of period weight.....	1 lb.,	15 oz.
Oil consumption .....	1 lb.,	10 oz.

**#4 K-K Flare:**

At beginning of period weight.....	2 lbs.,	5 oz.
At end of period weight.....	1 lb.,	1 oz.
Oil consumption .....	1 lb.,	4 oz.

**TEST RUN ON ROOF OF OUR BUILDING  
FROM 8:30 A. M. TO 5:30 P. M., 4/17/35**

Each of four torches was filled and adjusted in the manner recommended for practical use under weather conditions.

**#1 Using old style burner:**

At beginning of period weight.....	9 lbs.,	13 oz.
At end of period weight.....	6 lbs.,	15 oz.
Oil consumption .....	2 lbs.,	14 oz.

**#2 Truck Flare using Economy Burner:**

At beginning of period weight.....	4 lbs.,	4 oz.
At end of period weight.....	3 lbs.,	2 oz.
Oil consumption .....	1 lb.,	2 oz.

## Plaintiff's Exhibit No. 17

## 3 Bolser Flare:

At beginning of period weight.....	3 lbs.,	8 oz.
At end of period weight.....	2 lbs.,	2 oz.
Oil consumption .....	1 lb.,	6 oz.

## 4 K-K Flare:

At beginning of period weight.....	2 lbs.,	5 oz.
At end of period weight.....	1 lb.,	1 oz.
Oil consumption .....	1 lb.,	4 oz.

**TEST RUN ON ROOF OF OUR BUILDING**  
**FROM 8:10 A. M. TO 5:30 P. M., 4/18/35**

Each of four torches was filled and adjusted in the manner recommended for practical use under weather conditions.

## 1 Using old style burner:

At beginning of period weight.....	9 lbs.,	13 oz.
At end of period weight.....	6 lbs.,	14 oz.
Oil consumption .....	2 lbs.,	15 oz.

## 2 Truck Flare using Economy Burner:

At beginning of period weight.....	4 lbs.,	3 oz.
At end of period weight.....	3 lbs.,	0 oz.
Oil consumption .....	1 lb.,	3 oz.

## 3 Bolser Flare:

At beginning of period weight.....	3 lbs.,	10 oz.
At end of period weight.....	1 lb.,	4 oz.
Oil consumption .....	1 lb.,	12 oz.

## 4 K-K Flare:

At beginning of period weight.....	2 lbs.,	5 oz.
At end of period weight.....	1 lb.,	0 oz.
Oil consumption .....	1 lb.,	5 oz.

**TEST RUN ON ROOF OF OUR BUILDING**  
**FROM 8:40 A. M. TO 5:20 P. M., 4/19/35**

Each of four torches was filled and adjusted in the manner recommended for practical use under weather conditions.

## 1 Using old style burner:

At beginning of period weight.....	9 lbs.,	13 oz.
At end of period weight.....	6 lbs.,	9 oz.
Oil consumption .....	3 lbs.,	4 oz.



*Plaintiff's Exhibit No. 17.*

<b>#2 Truck Flare using Economy Burner:</b>		
At beginning of period weight.....	4 lbs.,	2 oz.
At end of period weight.....	2 lbs.,	11 oz.
Oil consumption .....	1 lb.,	7 oz.
<b>#3 Bolser Flare:</b>		
At beginning of period weight.....	3 lbs.,	10 oz.
At end of period weight.....	2 lbs.,	0 oz.
Oil consumption .....	1 lb.,	10 oz.
<b>#4 K-K Flare:</b>		
At beginning of period weight.....	2 lbs.,	5 oz.
At end of period weight.....	1 lb.,	2 oz.
Oil consumption .....	1 lb.,	3 oz.

**TEST RUN ON ROOF OF OUR BUILDING  
FROM 8:40 A. M. TO 2:40 P. M., 4/30/35**

**#1—Old Style Burner**

**#2—Truck Flare using Economy Burner**

**#3—Bolser Flare**

**#4—K-K Flare**

No. 2, No. 3 and No. 4 remained burning throughout the period.

**#1—was extinguished by the wind at:**

9:07 A. M.....	Relighted by J. E. Withrow
9:30 A. M.....	Relighted by J. E. Withrow
9:59 A. M.....	Relighted by J. E. Withrow
10:10 A. M.....	Relighted by J. E. Withrow
10:32 A. M.....	Relighted by L. W. Close
12:54 P. M.....	Relighted by J. E. Withrow
1:06 P. M.....	Relighted by J. E. Withrow
1:14 P. M.....	Relighted by L. W. Close
2:15 P. M.....	Relighted by J. E. Withrow
2:40 P. M.....	Relighted by J. E. Withrow

United States weather report records a maximum wind velocity during this period of 24 miles per hour.

No precipitation.

J. E. W.

**PLAINTIFF'S EXHIBIT NO. 18**

(Filed May 10, 1935)

March 13, 1935.

**TEST RUN ON ROOF OF OUR BUILDING**  
**FROM 4:45 P. M., 3-12-35, TO 9:30 A. M., 3-13-35**  
**16¾ HOURS.**

- 1-Using present burner uniform flame throughout period. Same as #2 and #3. Wick extended ¼ in.  
 Total weight when first lighted.....9 lbs., 8 oz.  
 At end of period total weight.....7 lbs., 2 oz.  
 Showing oil consumption of 2 lbs., 6 oz.  
 No perceptible consumption of wick.
- 2-Using present burner with slotted hole in top, uniform flame throughout. Wick extended ¼ inch.  
 Total weight when first lighted.....9 lbs., 7 oz.  
 At end of period total weight.....6 lbs. 15 oz.  
 Showing oil consumption of 2 lbs., 8 oz.  
 No perceptible consumption of wick.
- 3-Using present burner with top cut out, uniform flame throughout. Wick extended ¼ inch.  
 Total weight when first lighted.....9 lbs., 13 oz.  
 At end of period total weight.....7 lbs., 1 oz.  
 Showing oil consumption 2 lbs., 12 oz.  
 No perceptible consumption of wick.
- 4-Using old style standard torch, larger flame than No. 1, No. 2 or No. 3 at first. After one hour very slightly larger and at end of period very much smaller. Wick extended 1½ inches.  
 Total weight when first lighted.....9 lbs., 8 oz.  
 At end of period total weight.....6 lbs., 5 oz.  
 Showing oil consumption of 3 lbs., 3 oz.  
 Wick ¾ inch long, showing consumption of ⅝ inch.

J. E. Withrow

Lyman W. Close

**TEST RUN ON ROOF OF OUR BUILDING**  
**FROM 1:00 P. M., 3-14-35, TO 4:15 P. M., 3-15-35**  
**27¾ HOURS.**

- 1-Using present burner, uniform flame throughout period. Wick extended ¼ inch.  
 Total weight when first lighted.....9 lbs., 10 oz.  
 At end of period total weight.....5 lbs., 11 oz.  
 Showing oil consumption of 3 lbs., 15 oz.  
 No perceptible consumption of wick.

#2—Using present burner with slotted hole in top  $7\frac{3}{32}$ " x  $1\frac{1}{8}$ ", uniform flame throughout. Wick extended  $\frac{1}{4}$  inch.

Total weight when first lighted.....9 lbs., 13 oz.

At end of period total weight.....6 lbs., 1 oz.

Showing oil consumption of 3 lbs., 12 oz. No perceptible consumption of wick. At 7:30 A. M., when first examined, slotted hole was completely closed by carbon, the same as on previous tests run 3-13-35.

#3—Using present burner with top cut out, uniform flame throughout. Wick extended  $\frac{1}{4}$  inch.

Total weight when first lighted.....9 lbs., 9 oz.

At end of period total weight.....5 lbs., 8 oz.

Showing oil consumption of 4 lbs., 1 oz.

No perceptible consumption of wick.

#4—Using old style standard torch, flame same as others at beginning of period but smaller at end. Wick extended  $\frac{1}{4}$  inch.

Total weight when first lighted.....9 lbs., 12 oz.

At end of period total weight.....4 lbs., 5 oz.

Showing oil consumption of 4 lbs., 5 oz., and  $\frac{1}{8}$  inch wick consumed. In this test, however, the  $\frac{1}{4}$  inch extension of wick would not be used in the practical functioning of this torch, as the flame would not withstand even a moderately strong wind. For test purposes the torch was placed in a sheltered position.

J. E. Withrow

Lyman W. Close

**TEST RUN ON ROOF OF OUR BUILDING  
FROM 9:00 A. M., 3-15-35 TO 12:15 P. M., 3-16-35  
27 $\frac{1}{4}$  HOURS.**

Each of four torches was filled with exactly five pints of kerosene and allowed to burn until all oil was consumed. All flame were started at about equal size.

#1—Using present burner, uniform flame except for last two hours, when it started to diminish. Ran to 12:15 P. M., 3-16-35 — 27 hrs., 15 min.

#2—Using present burner with slotted hole  $7\frac{3}{32}$ " x  $1\frac{1}{8}$ ". Uniform flame except for last two hours, when it started to diminish. When observed at 3:00 P. M.



3-15-35, slotted hole had practically closed with carbon and for all purposes was completely closed from then on. Ran to 11:20 A. M., 3-16-35—26 hrs., 20 min.

3—Using present burner with top cut out. Uniform flame except for last two hours, when it started to diminish. Ran to 8:25 A. M., 3-16-35 — 23 hrs., 25 min.

4—Using old style torch. Flame gradually decreased from beginning and at no time as large as previous experience showed necessary for trustworthy performance in weather hazards. Ran to 8:10 A. M., 3-16-35—23 hrs., 10 min.

J. E. Withrow  
Lyman W. Close

### TEST MADE ON OUR ROOF

1:00 P. M., 3-20-35, TO 6:00 P. M., 3-21-35

AND

7:45 A. M., TO 6:00 P. M., 3-22-35, AND  
7:45 TO 9:30 A. M., 3-23-35

All torches filled with exactly 5 pints of coal oil. Started to rain 3:00 P. M., 3-20-35, and during the night severe rain and wind.

1—Standard Economy Burner ran through all periods. Was purposely extinguished at 6:00 P. M., 3-21-35, and reset at 7:45 A. M., 3-22-35. Extinguished purposely at 6:00 P. M., 3-22, and reset at 7:45 A. M., 3-23. Oil consumed and flame went out at 9:30 A. M., 3-23-35—41 hours.

2—Economy Burner with slotted hole  $7/32'' \times 1\frac{1}{8}''$ . Was out from attack of weather at 7:45 A. M., 3-21-35. Not knowing what time of night it was extinguished, further test was discontinued.

3—Economy Burner with top cut out. Extinguished by weather at 3:30 P. M., 3-20-35. Relighted and was out at 7:45 A. M., 3-21-35. Not knowing what time of night it was extinguished, further test was discontinued.

4—Old style standard torch. Same as #2.

J. E. Withrow  
Lyman W. Close

GENUINE

BOLSER

FLARES

Genuine BOLSER IR Flares

## The NEW IMPROVED FLARE for Trucks and Cars



### FLAGS KITS

3 FLAGS AND HEAVY CAN

VASS BAG \$2.00

**\$1.50**

PER SINGLE  
UNITS

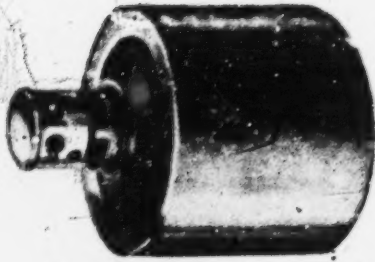
CAP &

HANDLE

75c EXTRA

CARRIERS

75c EXTRA

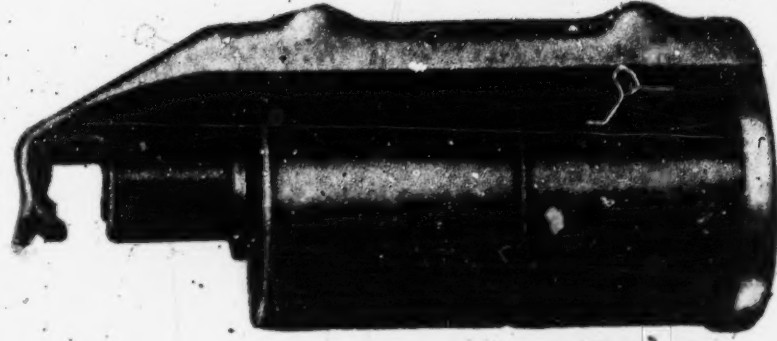


2 FLARES

CAPHANDLE

AND  
CARRIER

**\$3.95**

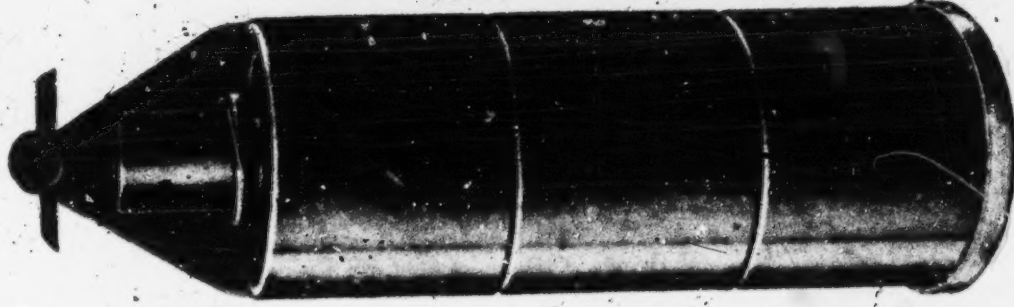


3 FLARES

CAPHANDLE

AND  
CARRIER

**\$4.95**



### SPECIFICATIONS

SHAPE: Round—flat top.  
CAPACITY: Approximately 2  
pints per flare.  
FUEL: Kerosene.  
BURNING TIME: Approx-  
imately 12 hours.  
HEIGHT: 4-inch flare: 15 1/2  
inches overall.  
DIAMETER: 5 inches.  
BURNER TIP: All weather  
shield and generator.  
WICK: Round, 3/8-inch.  
FINISH: Lacquer—green flare  
and orange holder.  
HOLDER BRACKET: Pressed  
steel with spring locking de-  
vice drilled for bolts.

SAFETY FOR  
OTHERS

SAFETY FOR  
YOURSELF

SAFETY FOR  
OTHERS



**BOLSER**  
CORPORATION

DES MOINES, IOWA  
S.W. NINTH & MURPHY ST.

The most complete line of flares and safety equipment. Genuine Bolser Flares are made to fit every size truck. Bolser locked-in-place flares are easily carried in any truck as regular equipment. Truck and Bus owners and drivers want ALL of the features combined only in Bolser Flares. They want CONVENIENCE, SAFETY, STEADY BURNING, MORE HOURS OF OPERATION. They know they must do their part in preventing accidents. Flares are the cheapest and best way of avoiding dangerous and costly accidents. The demand for dependable, long lasting flares is growing. State laws are enforcing this equipment.

Bolser Flares are your safety insurance. They are always ready for use—quickly set out or picked up—and more efficient than the law requires.

Genuine Bolser Flare Units to fit every need, such as our 3-unit Flare and Flags for trucks and busses; 2-flare units for autos and trucks; extra single units, etc.

**193**

**PLAINTIFF'S EXHIBIT 19-A**

**(Filed May 10, 1935)**

**Bolser Circular**



# Genuine BOLSER IR Flares

## THE ONE DEPENDABLE FLARE

### WITH OUTSTANDING FEATURES

# 6

No other flare of any kind provides ALL of the features of construction and advantages in operation that are combined in Bolser Flares. Every truck needs Bolser Flares to prevent accidents and to be within the law. Bolser Flares assure LONG LIFE—EASY OPERATION—INCREASED DEPENDABILITY.

A. The New "Valve Seat" Seal, patterned after the efficient automobile valve assures a perfect, long wearing, compensating seal at the bottom of the burner cap. When Genuine Bolser Flares are properly and tightly nested, this new seal absolutely prevents seepage or leakage of fuel and eliminates dangerous fumes. It's safe and sure. This is an exclusive Bolser feature.

B. The New Bolser Flares now incorporate four Breather Channels inside the wick tube, instead of the usual hold or holes drilled through the filler cap. These breather tubes equalizes the air pressure, allow free circulation through the entire wick, eliminate "fuel starvation" in high winds and increase the wick saturation without allowing the fuel to spill out, even when inverted. These breather channels are typical of Bolser engineering—building flares to give the best possible service.

C. The New Burner Tip on Genuine Bolser Flares greatly facilitates servicing or cleaning and adjusting the wick. Makes servicing the flare or wick simple and easy. This new tip also gives increased resistance to wind velocity.

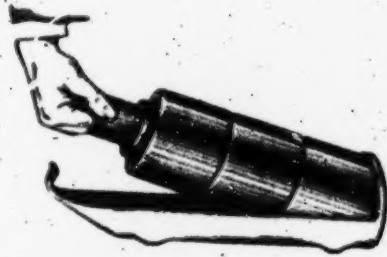
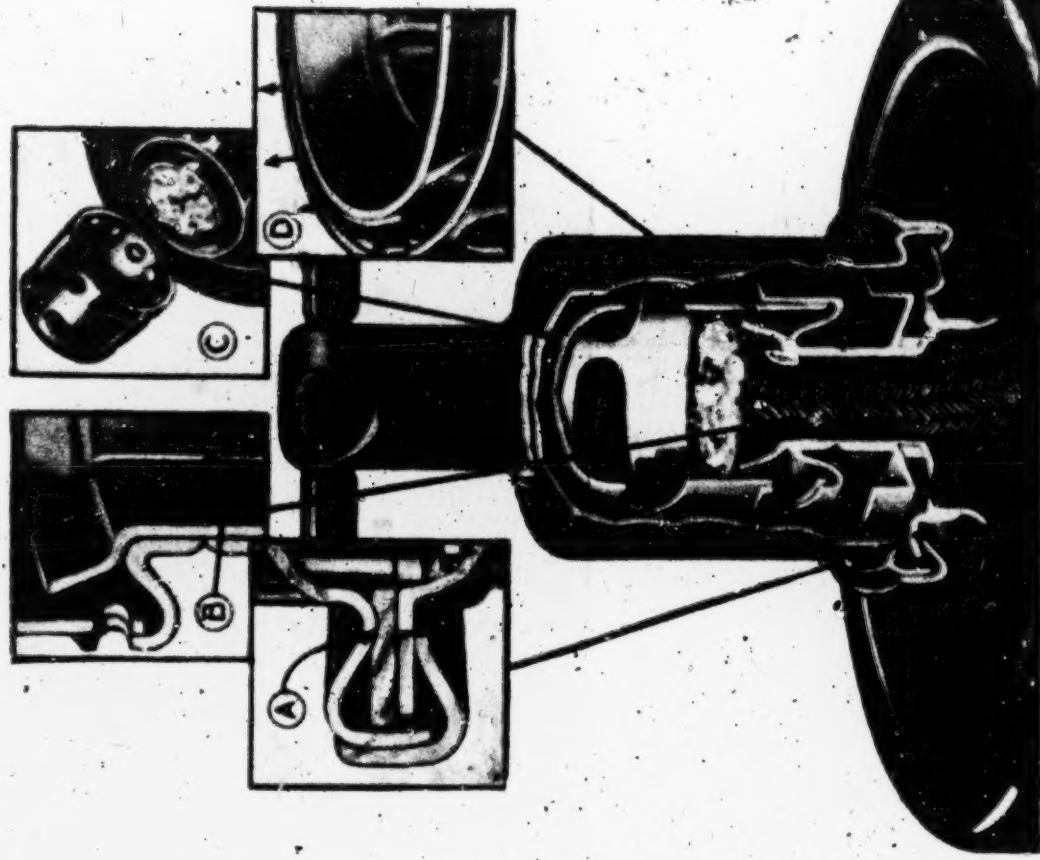
D. The New Deflector Cup adds greatly to economy and efficiency of Genuine Bolser Flares. It is cup-shaped to deflect the direct air current away from the wick. When heated, acts as a generator and burns around the rim of the cup and not off the wick. This arrangement saves the wick and saves fuel, increases burning hour capacity of the flare. Gives a full inch of burning surface from a 3/4-inch wick.

E. The fifth advantage of Bolser Flares is shown on the left below. The entire set of three flares is carried in one handy safe unit. Bolser Flares nest and can be locked in holder bracket. The unit can be carried on the inside or outside of the truck. The Bolser unit is rattle-proof and wear-proof.

F. The sixth big feature of Bolser Flares is the unique handle and locking device. Flares are easy to set out and pick up. A quarter turn of the handle locks the heated flares into a compact unit.

FROM  
**\$3.95**  
TO  
**\$4.95**

**BOLSER CORPORATION**  
DES MOINES IOWA, U. S. A.



**ALWAYS READY**



**EASY TO SET OUT  
AND PICK UP**

# THE ONLY NESTED FLARES

**194**

**PLAINTIFF'S EXHIBIT 19-A**

**(Filed May 10, 1935)**

**Bolsar Circular**

**PLAINTIFF'S EXHIBIT NO. 19-B**

(Filed May 10, 1935)

**THE BOLSER CORPORATION**

Manufacturers of Genuine Bolser Products

S. W. 9th and Murphy Streets

Des Moines, Iowa

April Fourteenth, 1934.

Gentlemen:

You will find enclosed a copy of your new Illinois flare issued under General Order Number 133 by the Illinois Commerce Commission.

Illinois has just recently passed this flare law and you, a jobber, there are hundreds of dollars of profit in this flare business if you will Step Out And Get It!

We are the pioneers of auto and truck flares. In the different states of the Union in which we have operated and have passed flare laws, we have supplied the jobbers with thousands of flares.

From our experience, we suggest that you immediately contact your salesmen and supply them with a sample flare and have them start contacting auto accessory dealers and garages, filling stations, truck depots and supply houses, and reap this harvest.

We are enclosing a photostatic copy of a letter to illustrate to you just what one little jobber in northwest Iowa did when the Iowa Flare Law was passed. For your information, he has passed the six thousandth flare at this time.

Enclosed is a circular which describes our flare line. Ask that you read this over carefully before placing an order for flares.

Off the prices listed on this circular, we will allow jobbers a discount of 50—5%, and 5% for cash, freight prepaid in lots of a dozen or more.

Now is the time to stock Genuine BOLSER Flares the flare which has become most popular with truck fleet owners.

Very truly yours,

The Bolser Corporation

R. W. Smith.



**PLAINTIFF'S EXHIBIT NO. 19-C**

(Filed May 10, 1935)

**NORTHWEST IOWA HEATER COMPANY**

Phones 40 and 866

Le Mars, Iowa

September 23, 1933.

Mr. C. M. Bolser

President, Bolser Corporation

Des Moines, Iowa

Dear Clark:

We are this morning sending you an order for five hundred (500) Flares, to be shipped immediately, which will make our thirty-five hundredth Flare.

At this time we wish to take the opportunity to thank you for your many kindnesses to our organization as we feel that thirty-five hundred Flares must put us pretty well up in the list of producers. If you remember at the time that I secured my first flare on the one thousand and flare order given you on or about June 19, 1933, I told you that we would sell between 2,500 and 5,000 Flares. We have just 1,500 more to go to reach the maximum and you should receive orders for these inside of the next two or three weeks.

It is our experience that the Bolser Flare has been a life saver for us. We have made more money from it in the short two and one-half to three months that we have been handling it, than anything else we have handled. It has given us additional volume at the time we needed it worst, and is, without question, the fastest moving piece of merchandise that has ever been my privilege to see, probably due chiefly to the sales promotional efforts of your company.

Without stopping to check invoices, we have added at least two hundred new dealers to our list of customers. Naturally, we will get repeat business on our other merchandise, as well, from them.

We again wish to thank you for your many kindnesses and trust that our business relations may continue to be pleasant and profitable.

Very truly yours,

Northwest Iowa Heater Company

H. R. Harley

HRH:MB

Jobbers of Winter Automotive Necessities

# K-K TRUCK FLARES AND FLAGS

*New laws in many states compels trucks to carry this equipment!*

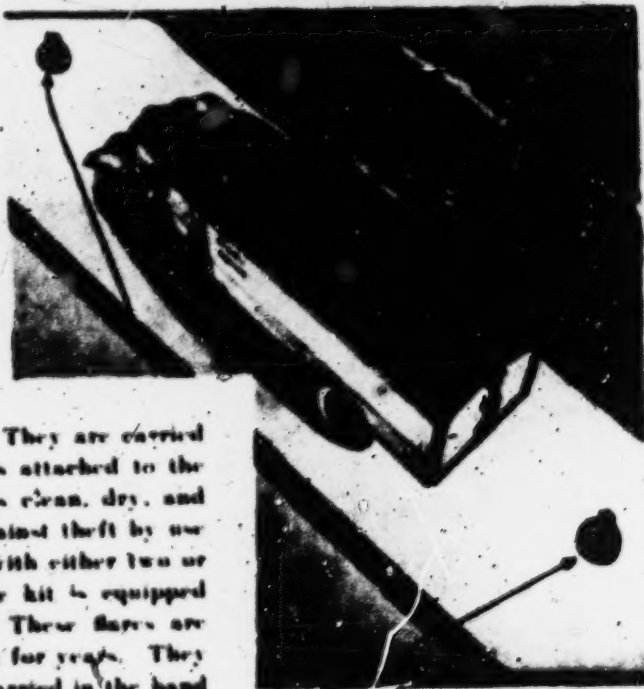
No. 2-B Stock No. A-3088

No. 3-B Stock No. A-3090

Even in states which have no laws many liability insurance companies compel trucks to carry flares and flags. K-K TRUCK FLARES are especially designed for this purpose.

FEATURING THE NEW  
IMPROVED . . .

LEAK  
WIND  
RAIN  
**PROOF**  
BURNER CAP



One flare must be placed 50 to 75 feet in front of stopped truck on highway at night, the other 50 to 75 feet behind in same states a third at the side.

These flares burn kerosene or fuel oil. They are carried in a convenient steel carrying case that is attached to the truck body or cab where they are always clean, dry, and ready for use. They can be protected against theft by use of a small padlock. They are furnished with either two or three flares to the kit and the three flare kit is equipped with two or three red flags if wanted. These flares are made of heavy 20 gauge steel and will last for years. They burn cooler than other flares and can be carried in the hand any place after being lighted or after burning several hours.

The specially constructed burner will continue to burn in a forty-mile gale and is not affected by rain or storm. The heat generated in this burner converts the fuel to a gas and only the gas burns. This adds a long life to the wick.

K-K TRUCK FLARES come packed six to the carton in either size kit.

Your Choice of Three Different Kits for Trucks

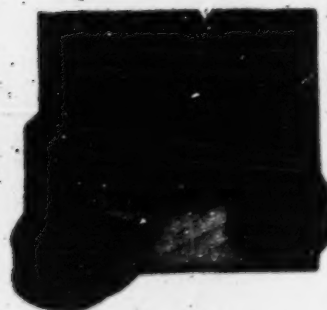
List Price

No. 2-B—Two flares and steel carrying case. Burning time, 8 to 10 hours when full. \$2.00

No. 3-B—Three flares and steel carrying case. Burning time, 8 to 10 hours when full. \$2.50

No. 3-B-F—Three flares and steel carrying case, including compartment equipped with three red flags with collapsible shafts. \$3.50

Extra flag made especially to be carried in No. 3 case, size 30x21 inches with 50 inch flag shaft when extended. Good quality cloth with fast color. Each .50



Sell ( K-K-L/R single sets  
( DAE cartons of 6 sets or multiples

(Filed May 10, 1936)  
Kari-Keen Circular

PLATE NO. 22-0





199

PLAINTIFF'S EXHIBIT 22

(Filed May 10, 1935)

Dietz First Open Flame Burner Circular

DIETZ  
ROADSIDE  
TORCHES

for

Contractors

No. 96  
SPHERICAL  
TORCH

No. 80  
HEMISPHERICAL  
TORCH

**D** IETZ ROADSIDE TORCHES fulfill the most exacting requirements for this type of lighting device. They are solidly built of steel to withstand rough usage. In design and construction there is evidenced the same careful regard for dependability and satisfactory performance that characterizes all Dietz products.

The Spherical Torch has a weighted bottom, which causes it to return to position if tipped or knocked over. The Hemispherical Torch is not weighted but it has a broad, stable base which causes it to stand firm as a find against injury.

SPECIFICATIONS

Dietz Roadside Torches burn Kerosene, lighted by a Quick Start. They are made in two styles as illustrated. Each is provided with a cast steel frame, heavy carrying loop and an automatic lock, which prevents the torch from blowing away.

No. 96 Full Spherical Torch with weighted bottom. Overall height 11 in. Diameter 7 in. Weight 7 lbs. No. 80 Hemispherical Torch with weighted bottom. Overall height 11 in. Diameter 7 in. Weight 7 lbs. Both torches burn Kerosene. The diameter of each is 7 in. The height of each is 11 in. The weight of each is 7 lbs. The carrying loop is 1/2 in. thick. The automatic lock is 1/2 in. thick. The torches are made of cast steel. The torches are made in two styles as illustrated. Each is provided with a cast steel frame, heavy carrying loop and an automatic lock, which prevents the torch from blowing away.

**DIETZ ROADSIDE  
TORCHES** are  
unexcelled by  
any device of their  
type for lighting power  
and dependability in  
all kinds of weather.

There's torches are  
made in two distinct  
models, adaptable to  
all service conditions  
and providing an at-  
tractive price range to  
meet the varying re-  
quirements of con-  
tractors.

**R. E. DIETZ COMPANY**

**NEW YORK**

Largest Makers of Luminaires in the World

FOUNDED 1900



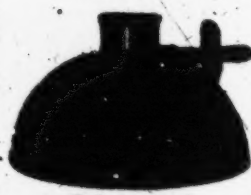


No. 55  
Lamp for Road  
Use (17)

# DIETZ HIGHWAY FLARE TORCH for Motor Vehicles

(EIGHTY-NINE NOT VENTURED)

*Designed to comply with the Law  
in States requiring that Two Road  
Torches be carried by Motor  
Trucks and Busses for use in  
event of breakdown on the road.*



No. 55

As Used in Clear Work.  
(HOLD DOWN)

one which laws of certain states re-  
quire the two torches of this type be car-  
ried by Motor Trucks and Busses. In the  
event of breakdown on the right-of-way, a lighted  
torch is placed on the road both ahead and

behind the vehicle for protection of other traffic.  
No. 55 Vehicle Torch is of similar construction  
and functions exactly like our larger torches but  
is made of lower height, so that a pair can readily  
be carried under the driver's seat.

## SPECIFICATIONS

SHAPE: Spheroidal, Streamlined  
CAPACITY: 15 Gallons (17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 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1854, 1855, 1856, 1857, 1858, 1859, 1860, 1861, 1862, 1863, 1864, 1865, 1866, 1867, 1868, 1869, 1870, 1871, 1872, 1873, 1874, 1875, 1876, 1877, 1878, 1879, 1880, 1881, 1882, 1883, 1884, 1885, 1886, 1887, 1888, 1889, 1890, 1891, 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900, 1901, 1902, 1903, 1904, 1905, 1906, 1907, 1908, 1909, 1910, 1911, 1912, 1913, 1914, 1915, 1916, 1917, 1918, 1919, 1920, 1921, 1922, 1923, 1924, 1925, 1926, 1927, 1928, 1929, 1930, 1931, 1932, 1933, 1934, 1935, 1936, 1937, 1938, 1939, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2



202



No. 96

(REGISTERED)

DIETZ No. 96 Torch is made of steel. Because of its spherical shape and weighted bottom this torch will right itself when it is down or knocked from position by a pass-buck. It is fitted with the Dietz ALL-WEATHER Steel Burner with Rain Shield, Car-Lamp and an Automatic Wick Lock, which is the wick from shipping.

## SPECIFICATIONS

Substant with  
and bottom  
ITY: 24 Pail Capacity  
(GAL)  
Burner or Light  
Oil  
Show time 20 Hours  
F: 7 1/2 Inches

DIAMETER: 7 1/2 Inches  
BURNER: ALL-WEATHER  
and Rain Shield  
WICK: Round 5/16 Inch  
FINISH: Enamelled Black  
PACKED: 1 in a Carton  
SHIPPING WEIGHT: 22  
Lbs.

Illustration of right shows Dietz No. 96  
Torch, burning with Rain Shield of  
left, in "Down" position.

## DIETZ HIGHWAY FLARE TORCHES

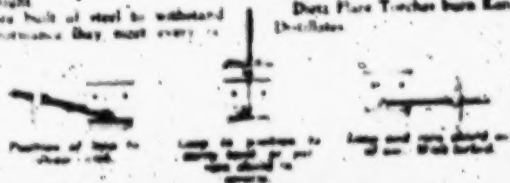
DIETZ Highway Torches are favored by many  
Construction who prefer this type of night  
warning device for use while road construction  
is in progress.

The torches are made in two styles, one spherical and  
the other hemispherical in shape. On the latter there  
are two sizes, the smaller being particularly designed  
to hang from bottom of Lanes, which require their  
use by Motor Trucks and Buses that become stalled  
on the right-of-way at night.

Dietz Flare Torches are built of steel to withstand  
harshest usage. In performance they meet every re-

quirement of which torches are capable. A notable  
structural feature is the ALL-WEATHER BURNER  
of steel, which is fitted with Carrying 5/16 Automatic  
Wick Lock and Adjustable Rain Shield. The flame  
burns perfectly with or without the shield. The shield  
is not intended to aid burning and torches are designed  
to function without it. Hence the shield is kept turned  
down, away from the flame, unless protection is desir-  
able against rain or snowy weather.

Dietz Flare Torches burn Kerosene, Fuel Oil or Light  
Distillates.



The ALL-WEATHER BURNER - How It Works



DIETZ ALL-WEATHER TORCH BURNER is of  
steel, which is fitted with Carrying 5/16 Automatic  
Wick Lock and Adjustable Rain Shield. The flame  
burns perfectly with or without the shield. The shield  
is not intended to aid burning and torches are designed  
to function without it. Hence the shield is kept turned  
down, away from the flame, unless protection is desir-  
able against rain or snowy weather.

DUE TO ITS OPEN CONSTRUCTION - DIETZ ALL-WEATHER  
BURNER WILL NOT BE DAMAGED  
CHANGED WITH WIND



No. 80

(NOT REGISTERED)

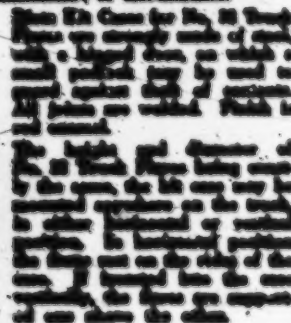
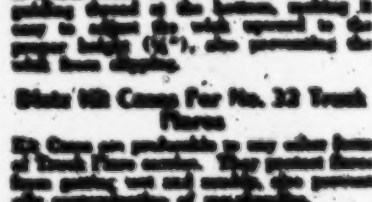
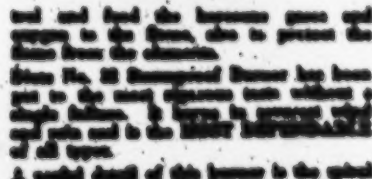
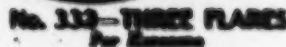
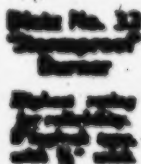
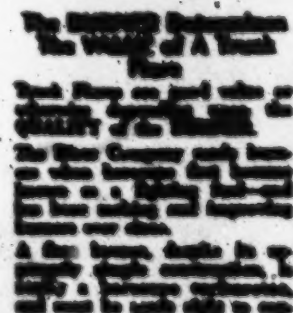
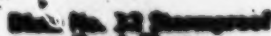
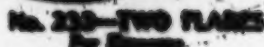
DIETZ No. 80 Hemispherical Torch is  
made of steel. With its open  
burner, the bottom provides light and  
the carrying bracket also aids in  
positioning. On the torch is a  
WEATHER Steel Burner, with Rain Shield  
a Carrying Lamp. An Automatic Wick Lock  
keeps the wick from shipping.

## SPECIFICATIONS

Capacity: 24 Pail Capacity	Capacity: 24 Pail Capacity
Capacity: 24 Pail Capacity	Capacity: 24 Pail Capacity
Capacity: 24 Pail Capacity	Capacity: 24 Pail Capacity
Capacity: 24 Pail Capacity	Capacity: 24 Pail Capacity
Capacity: 24 Pail Capacity	Capacity: 24 Pail Capacity
Capacity: 24 Pail Capacity	Capacity: 24 Pail Capacity
Capacity: 24 Pail Capacity	Capacity: 24 Pail Capacity
Capacity: 24 Pail Capacity	Capacity: 24 Pail Capacity

DIETZ TORCHES

**Carried By Motor Trucks  
For Emergency Use  
When Stalled On  
The Road  
At Night**



### EXHIBIT No. 33 SPONGEMOOR TRACK PLANE



departments, cities, public utilities, road  
builders and progressive contractors  
everywhere. Buy it in any kind of  
weather—rain, wind, snow, sleet.

## RELIABLE! SAFE!

No. 1 Large  
13 Cans  
4 quarts  
burns 48 hours

No. 2 Small  
13 Cans  
2 quarts  
burns 24 hours



REGISTERED BY

CASE No. 1408-1412.

PLAINTIFF'S EXHIBIT.

NO. 25

McCloskey Torches are made in two  
kinds, of rolled and pressed deep drawn steel  
and welded together. Sections can be removed  
without injury to the burner assembly, you  
can then be having burned over.

McCloskey Torches will burn for  
twenty eight and thirty hours, with  
just one filling. No kindling is necessary.  
One burner will light up your job house  
and 20 lanterns, which makes the fact that  
there are more, but with modern fuel, fuel  
oil is the best, and lanterns and kerosene  
expensive. If you will light up your job  
drawing station and the cost of replacing fuel  
oil lanterns, you will be amazed and  
understand why 175 lanterns are required to  
supply this demand. Large cities who have  
looked into the matter have adopted lanterns of  
standard equipment, and most of the cities and  
Utility Companies are doing the same.

Designs applied particularly to lanterns  
and lamps on a small range of price, to day  
supply lanterns, lanterns in lantern cost.

No. 2 Torch, model in series of 4, making 10 lbs.

No. 1 Torch, model in 10 lbs. 100 pounds to the lamp.

Small Case, Model No. 100, 100 lbs.

# McCloskey TORCHES

POSITIVELY

The Best Danger Signal Model



Patented March 1, 1912  
LEAN  
EFFECTIVE  
DEPENDABLE  
ECONOMICAL

McCloskey



## WHY PROTECT YOUR JOB WITH A PIECE OF TIN

When you can get a real danger signal, affording protection under all conditions at low cost. We have explained to you elsewhere why torches are more economical, but our main appeal to you is the feature of safety. The cost of defending a damage suit if you win, it is enough to supply you with torches for a life time, and if you lose, it the cost may be enough to put you out of business. When you put 50 torches on a job at night you know there will be 50 there in the morning, so they are undisturbed and never stolen, being suitable for construction work only, but when you put 50 lanterns on the job, you are likely to have 25 stolen and the other 25 broken up by joy riders. McCloskey torches will pay for themselves in a short time and you will always have the feeling that your job is protected and traffic will move rapidly and safely through the danger zone.

Torches are being used in Australia, Central America and South America and all parts of the United States and Canada.

If your dealer does not handle torches write us, and we will give you the name of the nearest dealer, or supply you direct if you cannot afford to be without this modern protection.

**Closkey**

**BOMB  
SHELL**

**Torches**



Torches are made to burn and  
stand all kinds of weather. They are  
your insurance against accidents.

For prices and information,

CASE NO. 1412

**PLAINTIFF'S EXHIBIT**

**YOU CAN'T UPSET  
No. 96 THEM**

**THEY RIGHT THEM-  
SELVES**

**CLOSKEY TORCH CO.**

**TOLEDO, OHIO**

1st Street

Sept. 9/29

# TOLEDO TORCH



The harder the  
the better the

**Toledo Torches** have established  
a reputation . . . for dependable  
performance at low cost, the  
unequalled by any other  
light made.

Sold by equipment dealers everywhere.

**The**  
**Toledo Pressed Steel Co.**  
**Toledo • Ohio**



**PLAINTIFF'S EXHIBIT NO. 27**

(Filed May 10, 1935)

**IOWA****STATE HIGHWAY COMMISSION****AMES, IOWA**

Commissioners:

Carl C. Biepe, Chairman, Burlington

Thomas A. Way, Des Moines

A. Maine, Waterloo

J. Ditto, Sibley

D. Archie, Sidney

F. R. White,  
Chief Engineer

April 9, 1935.

Toledo Pressed Steel Co.,

Phillips Avenue,

Toledo, Ohio.

Attention Mr. Lyman W. Close

Gentlemen:

In response to your recent request for information regarding our truck flare laws, their administration and methods of tests for the flares used under the requirements of these laws, rules, regulations and the specifications developed for the flares, we have prepared the following statement:

Certain of the laws enacted by the Forty-fifth General Assembly of Iowa Legislature, early in the spring of 1933, required that after May 4, 1933, motor trucks and motor truck combinations, during the period from one-half hour after sunset to one-half hour before sunrise, should be equipped at all times with portable flares. These flares were to be used in indicating the location of the vehicle when stopped on or adjacent to the travelled way during the hours of darkness.

The laws as stated in Chapter 83 of the Acts of the Forty-fifth General Assembly failed to specify the enforcing agency, but it has been held that the Motor Vehicle Department was implied as this agency. Under this it was further implied that the Motor Vehicle Department had authority to prepare rules and regulations for the enforcement of, and compliance with these. The rules and regulations issued by the Motor Vehicle Department have been published in a pamphlet Motor Vehicle Laws prepared and circulated by that

*Plaintiff's Exhibit No. 27.*

department. Two copies of this pamphlet have been closed. The flare laws are found on pages 21 and 22, and the rules and regulations arising from them on page 2.

In these rules and regulations the Iowa State Highway Commission became involved in the administration of the laws through a co-operative agreement with the Motor Vehicle Department to the extent whereby the Highway Commission would test the flares and make recommendations regarding their disposition and use.

The first action of the Highway Commission was that of a survey of the types of flares which would be available for this use, and the second consideration was that of a specification and method of test for the selection of the flares which would be satisfactory. As a result, after a considerable amount of experimental work, specifications for flares were developed by the Highway Commission and approved by the Motor Vehicle Department. These studies were made upon all the readily available types of flares and signal lamps which could be considered practical for the use to which they were to be put.

In the experimental work it first became necessary to select the characteristics of the flares to be observed and measured and, second, to devise methods of tests for the accomplishment of these objectives. Four tests were devised, namely the wind test, the combined wind and rain test, the carbon deposition test, and the length of burning time test.

For the wind tests a wind tunnel was prepared in which definite velocities of wind could be provided, and these velocities repeated as often as desired. After somewhat lengthy consideration of actual operating conditions as they would exist for these flares when used in Iowa, two velocities were selected for these tests, one of 40 miles per hour, and the other of 26 miles per hour.

In the combined rain and wind test, the wind velocity was 26 miles per hour, and the rain applied at the rate of 2.48 inches per hour. In the carbon deposition test, the amount of carbon and its effect on the behavior of the flare was noted after two hours of operation in a quiet atmosphere. The length of burning time was determined by actual tests of the flares or lamps under actual operating conditions.

The specifications for the flares which were adjudged to be satisfactory required, for the wind tests, that the flare remain lighted at least 30 second in the wind at 40 miles per hour, and that it should burn continuously in the wind at 26 miles per hour; that the flare burn at least five minutes in the combined rain and wind; for the carbon deposition test, that the carbon deposit be light and the flare burn, or remain in such condition that it would pass the two proceeding tests; for the burning time tests, that the flare or lamp remain lighted for at least eight hours.

In the experimental work preceding the development of these tests and the preparation of the specifications, it was found that a considerable number of flares could be made available for use as satisfactory signals under the requirements of the truck flare law. The principal group of these flares were of the oil burning, equipped class. These were of two general types, the open or unprotected flame type and the hooded, or protected, flame type. None of the open flame type gave satisfactory performances in the tests described above, particularly the wind and the combined wind and rain tests.

The hooded or protected flame type proved to be a great improvement over the open flame type. There were offered, however, samples of the hooded type which failed to meet the requirements of the above specifications, principally for the reason that the combustion chamber within the hood protecting the flame was either inefficiently ventilated, or was too small to permit satisfactory combustion of the oil and gases drawn from the wick.

As a result none of the open flame type were considered satisfactory for use in this work, and the results of these tests were checked by observations of the performance of the open flame type, which have been used in some form or another as flares indicating obstructions in work under construction, or barricades on construction projects.

All of the hooded or protected flame type were found to be a great improvement over the open flame type as produced by the same manufacturer. In several instances manufacturers originally producing open



## PLAINTIFF'S EXHIBIT 31

No. 181,030.

Catalog Sheet Illustrating Device of Billingham Patent,

CATALOG PAGE ILLUSTRATING BILLINGHAM TORCH

SALES DEPT E. P. GLEASON MFG CO.

115

# BILLINGHAM'S IMPROVED STREET LAMP TORCH

(Patented)

- A. Shows Flame.
- B. Shows Burner.
- C. Reservoir for holding oil.
- D. Bottom into which the handle is fitted.
- E. The torch complete, less the handle.

Fig. 1. Represents a view of the Torch with outline of Shell or outside covering.

Fig. 2. Shows aperture through which it is designed to light the Torch without removing the cover or outside shell.

## DIRECTIONS:

For filling, unscrew and remove outside shell or cover, also unscrew burner and fill as in ordinary lamp.

For lighting the Torch, push aside the covering to aperture, Fig. 2, by means of thumb piece, as shown, and light with a match, after which close aperture and the Torch is ready for use.

Use Sperm Oil.



Fig. 1394

Length, 11 inches.

Each, \$6.00

The necessity for some device for Lighting Street Lamps without the aid of a ladder has long been felt. The accompanying cut illustrates an article that entirely does away with the old slow mode of climbing up and lighting with a match.

By fitting this torch to a handle—any length that is desired—it can be carried in any weather, without danger of blowing out. Passing it up through the bottom of the lamp and pressing against one arm of the Street Lamp Cock, the gas is let on and lighted at the same instant. The gas can also be extinguished by pressing against the other arm of Street Lamp Cock. We are now prepared to fill orders at short notice for both articles, and commend them to Gas Companies and all others interested in Street Lamp Lighting.

flame types of flares improved them by enclosing, hooding, or in some manner protecting the flame. In some cases, however, manufacturers not previously producing flares presented samples of hooded types of flares which were unsatisfactory. In the majority of cases the flares were made satisfactory by re-designing or improving the construction of the hood, cap, or other protection for the flame.

We believe this will give you, briefly, the history of the development of flares, flare tests, and flare specifications, as they have been accomplished in Iowa.

We regret that we were unable to comply with your request sooner, but illness and other pressing duties have delayed action on our part.

Yours very truly,

Mark Morris,  
Research Assistant.

MM:BY  
Enclosures

# Seeing is Believing

Here is an actual size, unretouched photograph of

## THE TOLEDO TORCH

"Standard"

as you will receive it, ready to go to work on your job,  
and stay there until the job is done.

**Toledo Pressed Steel Co.**

**Toledo, Ohio**



**213**

**PLAINTIFF'S EXHIBIT 30**

**Circular Concerning Plaintiff's Open Flame Torch**

**PLAINTIFF'S EXHIBIT 31**

No. 181,030.

Catalog Sheet Illustrating Device of Billingham Patent,

116

**SALES DEPT E. P. GLEASON MFG CO.****TAPER SLIDE AND KEY**

Patented March 27, 1888

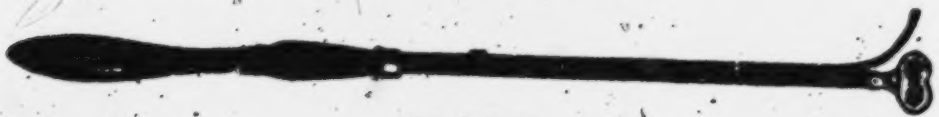


Fig. 1395

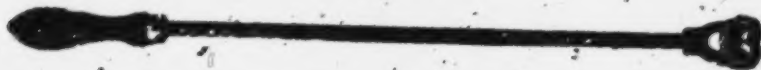
Nickel Dipped  
Nickel Plated  
Brassper dozen, \$ 2.50  
" 4.50  
" 10.00**GAS KEY**

Fig. 1396

Per dozen

\$6.00

**CURVE TAPER HOLDER**

Fig. 1397

Per dozen

\$7.50

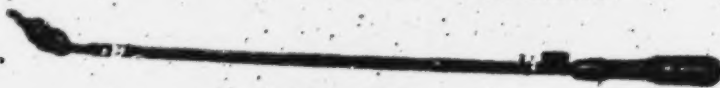
**STRAIGHT TAPER HOLDER**

Fig. 1398

Per dozen

\$2.50

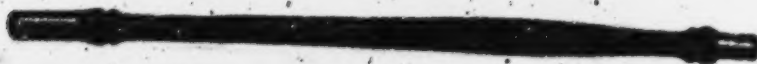
**MIDDLE EXTENSION PIECE**

Fig. 1399

Per dozen

\$9.00

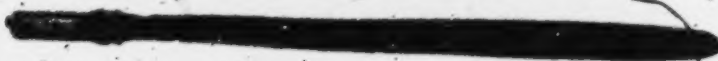
**END EXTENSION PIECE**

Fig. 1400

Per dozen

\$9.00

CASE NO. 1408 - 1418

DEFENDANT'S EXHIBIT

NO. 1

THE TOLEDO TORCH

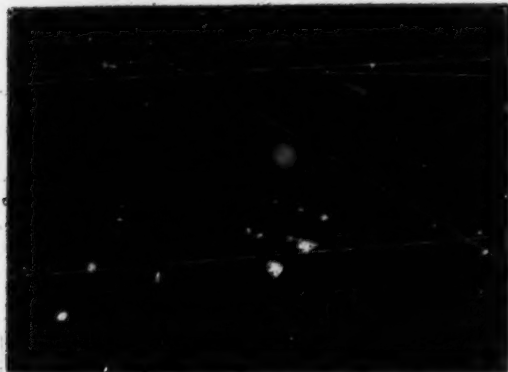


IT RIGHTS ITSELF

**T**HE use of the Toledo Torch on construction work removes all liability of accidents. It is always seen and quickly understood, because it makes all of the hazard clearly visible.

It will burn through wind and rain for more than twenty-four hours, if necessary, on one filling.

It is made of pressed steel and is practically indestructible, with no parts to clean, adjust or replace. It is counter-weighted to make it always self-righting.



The very nature of its construction and its manner of operation confine its application to use on construction work. It is because of this fact that the experience of thousands of users prove there is practically no loss from theft.

The Toledo Torch will operate perfectly on the lower grades of fuel, such as light furnace oil, which makes this

unbreakable and theft-proof warning signal more economical to operate than any other type of danger light.

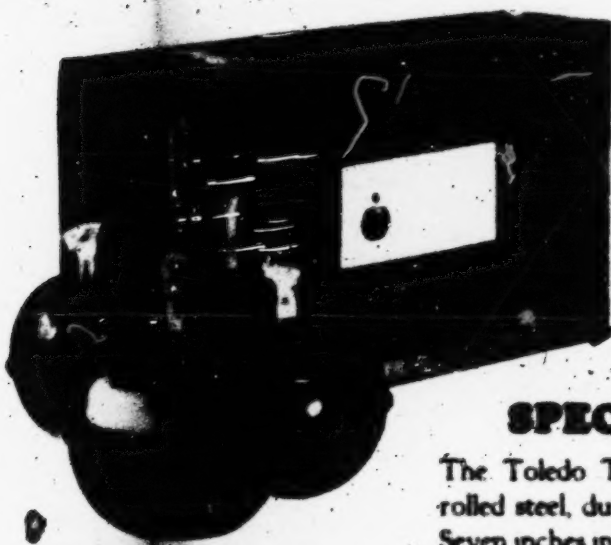
If you have never seen Toledo Torches in operation or have never used them, you should do so at the first opportunity. Having been approved and recommended by The United States Fidelity & Guaranty Company and having received the A. G. C. Seal for Successful Performance, they are of proven merit. Nearly half of the state highway departments have adopted the Toledo Torch and the thousands of utilities and contractors who are also using them, find in them the solution to an expensive and troublesome problem.



under the Hatch Box



*Not allowed on 78 & more*



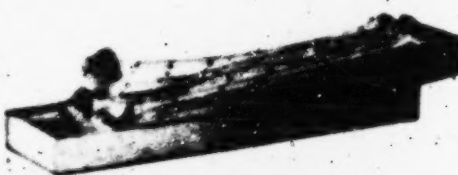
**T**his box is the standard package. It contains six Toledo Torches. Freight is allowed on all single shipments of three (3) or more boxes. A discount of 10% is allowed on all single orders for one gross or more.

### SPECIFICATIONS

The Toledo Torch is made from cold rolled steel, durably finished in baked enamel. Seven inches in diameter. Fuel capacity, seven-tenths of a gallon. Burns an average of twenty-four hours on one filling. Large ring for convenient handling. Double-seamed, leak-proof joint. Cast iron counterweight, electrically welded in place. Weight, unfilled, five and one-half pounds.

Ownership name plates may be welded on Toledo Torches, as shown above, at an additional cost of \$1.25 per dozen in quantities of less than six dozen. They will be attached free on quantities over six dozen.

The standard wick furnished with the torch may be obtained in packages of one dozen, shipping charges prepaid. The performance of the torch is guaranteed, if the standard wick is used.



### PRICES

TOLEDO TORCHES	\$ 20.00 per dozen
	\$216.00 per gross
STANDARD WICKS	\$ 1.75 per dozen
	\$ 20.00 per gross

*For shipment of Toledo Torches, west of the Rocky Mountains add \$4.00 per dozen to cover express freight*

Manufactured by

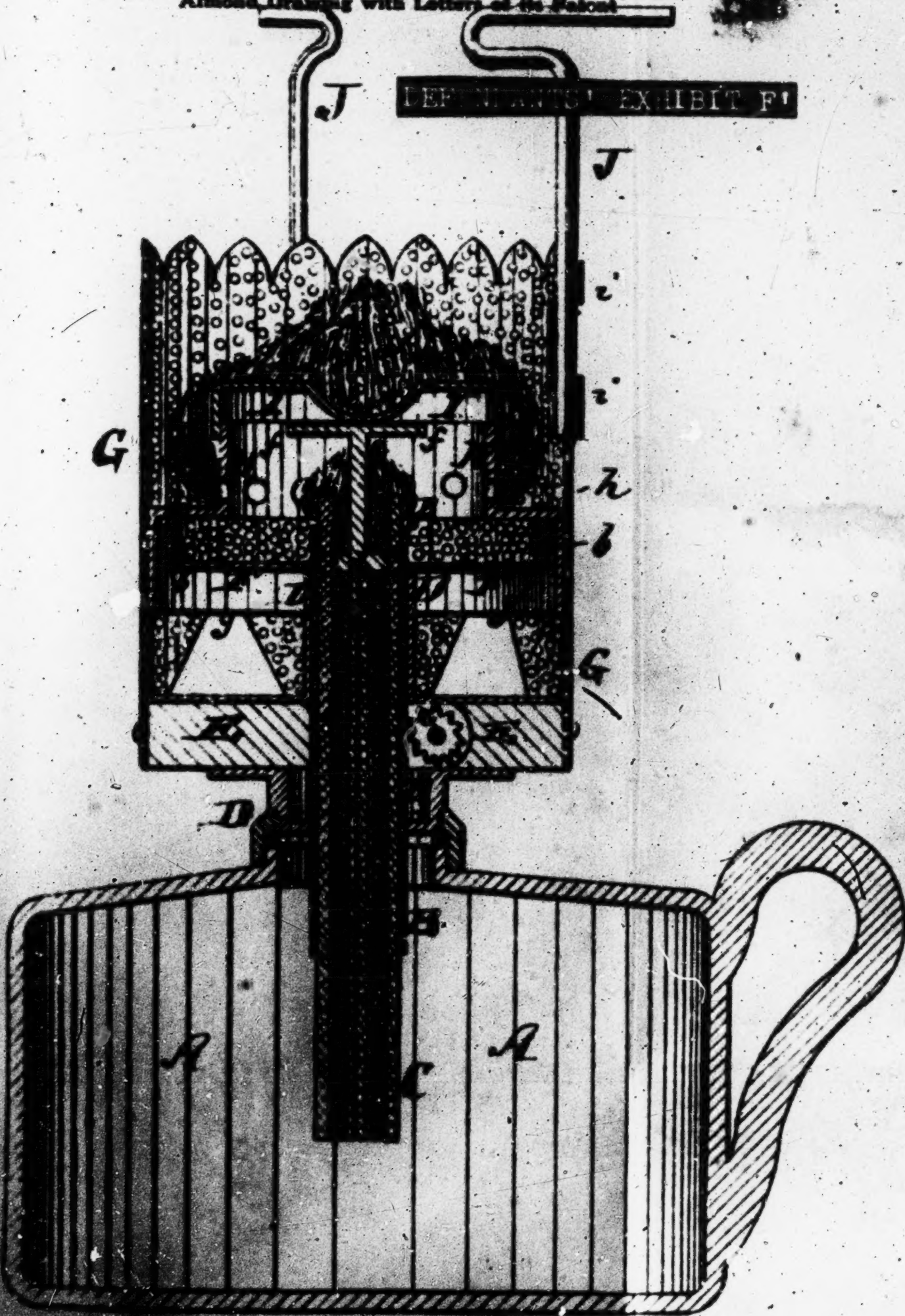
**THE TOLEDO PRESSED STEEL CO.**  
1212 STREET and WOODBURY AVE.  
TOLEDO, OHIO

Fig. 1

DEFENDANTS EXHIBIT F1.

Almond Drawing with Letters of its Patent

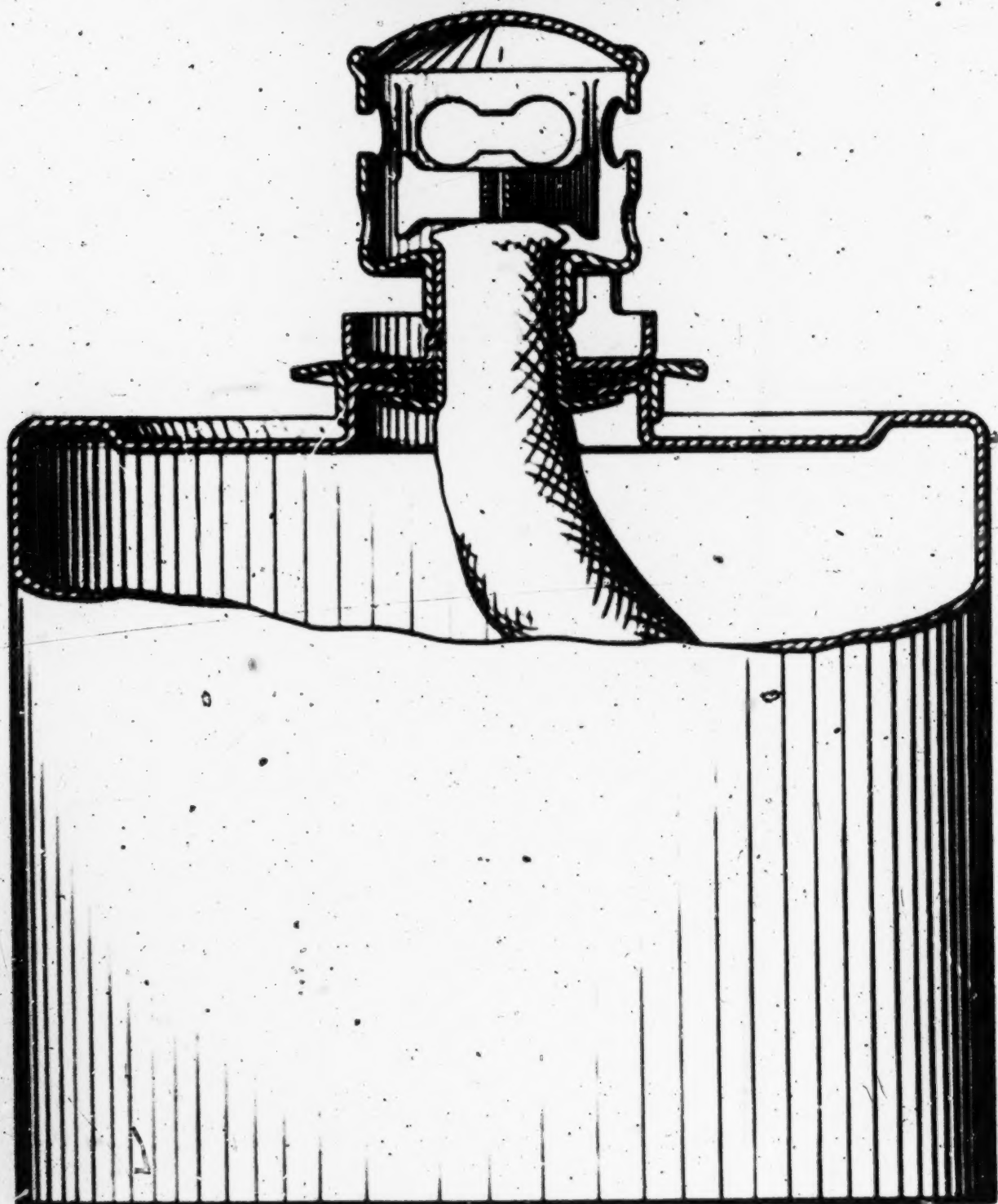
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**DEFENDANTS' EXHIBIT K**

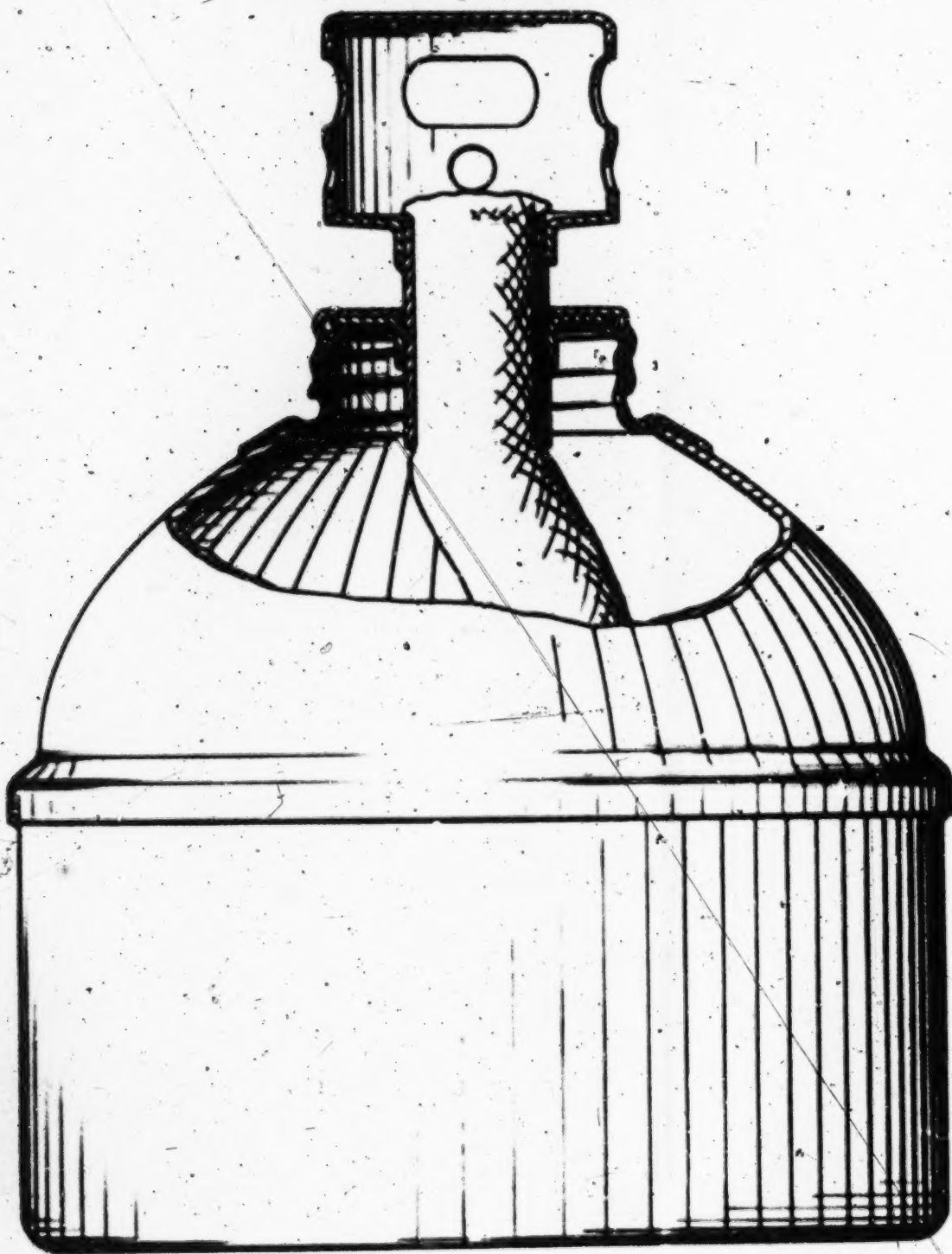
**Drawing — Defendant's Flare Complained of —  
Equity No. 1408 (Bolser)**



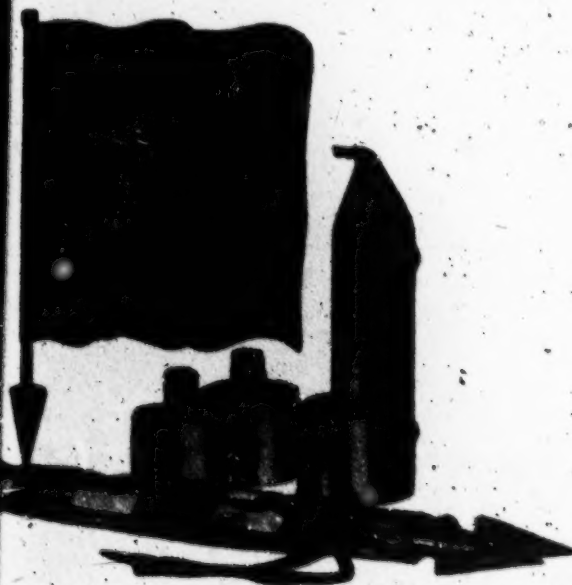


**DEFENDANTS' EXHIBIT L**

**Drawing — Defendant's Flare Complained of —  
Equity No. 1412 (Kari-Keen)**



## Hi-Way Warning Flags for All Motor Vehicles



Consists of 3 Flags and Heavy  
Canvas Bag

are made of same material and con-  
struction used by major railroads for more  
than 50 years and in accordance with their  
specifications. They are a proved product.  
Flag 18 x 18 inches. Flag staff made  
of high clear birch. Finished with broom-  
finish. Metal parts are cadmium plated  
and rustproof. Flag staff is jointed by heavy  
claws and has a spear shape metal point  
which easily be driven into pavement joints,  
blocks, gravel or dirt road or shoulders.

Complete set of 3 flags and bag... \$2.00

## Genuine Bolser Flares—For Safety

*This Safety Feature PREVENTS Accidents*

Liability insurance can rebuild a crashed car—pay  
a hospital bill—compensate for lost time, but it can't  
return the dead to life, or repair shocked and shat-  
tered nerves.

Protect yourself against the grief and pain of hurt-  
ing others. Do your part to prevent the thousands  
of motor car accidents that occur every year because  
of stalled trucks, buses and cars being struck by  
speeding cars. Hundreds of thousands of others are  
barely avoided. Thousands of lives are lost—more  
thousands of people injured—millions of dollars  
worth of property damaged.

Your own good judgment says "Use Flares." Com-  
parison and common sense say Use the Best Flares—  
the Genuine Bolser Flares—road tested and time tried.

Bolser Flares are your safety insurance. They are  
always ready for use—quickly set out or picked up—  
and more efficient than the law requires.

SAFETY FOR  
OTHERS

SAFETY FOR  
YOURSELF

SAFETY FOR  
OTHERS



Distributors

# REAL SAFETY INSURANCE

The New  
IMPROVED

DEPENDANTS EXHIBIT IN  
Bolser Catalog



**Exclusive Features**

Found only in  
Genuine Bolser Flares

No other flare of any kind  
provides all the features of  
construction and advantages  
in operation that are combined  
in Bolser Flares.



- NEW Valve Seat
- FOUR Breather Channels
- NEW Burner Tip
- NEW Deflector Cup

*Genuine*

# BOLSER Flares

FOR TRUCKS ♦ BUSES ♦ COMBINATION TRAILERS ♦ ETC.

Protected by U. S. Patent No.  
1981829 other patents pending



*Only*



The greatest advance in flare construction of all  
time. Leak-proof. Gas-proof. Rattle-proof.  
Water-proof and Wear-proof.

## SET OF 3

Complete with easily attached handy bracket that keeps  
flares safe and ready for instant use. The unique handle and  
locking arrangement makes them easy to set out or pick up.  
A quarter turn of the handle locks the nested flares into a  
compact, leak-proof, gas-proof, water-proof, wear-proof unit,  
which cannot rattle or be lost and is always ready for instant  
use.

This exclusive feature assures the operator of finding his  
flares in a serviceable condition when needed.

Approved by Highway Com. missions and Insurance  
Companies All Over the United States



An achievement that challenges the wisdom of using any other  
flare. Built to give maximum years of profitable service. A  
thoroughly proved product.

### SPECIFICATIONS

SHAPE: Round, flat top.  
CAPACITY: Approximately 2  
pints per flare.  
FUEL: Kerosene.  
BURNING TIME: Approximately  
12 hours.  
HEIGHT: 4-inch flare: 15 1/4  
inches over all.  
DIAMETER: 3 inches.

BURNER TIP: All weather shield  
and generator.  
WICK: Round, 1/4-inch.  
FINISH: Lacquer — Green flare  
and orange holder.  
HOLDER BRACKET: Pressed  
steel with spring locking de-  
vice drilled for bolts.



3 of these flares  
in each unit.



The Standard  
Truck Unit — 3  
flares — compact  
ready, easily  
and picked up  
against loss.

*Bolser Flares Prevent Accidents*

**The BOLSER CORPORATION**

Des Moines, Iowa

U. S. A.





**DEFENDANTS' EXHIBIT N**

**Patent No. 56,949—Gas Burner—Jones & Collins—August 7, 1866.**

*Jones & Collins.*

*Gas Burner.*

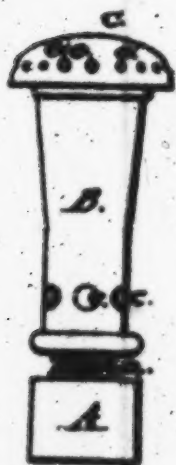
*N<sup>o</sup> 56,949.*

*Patented Aug. 7, 1866.*

*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



*Witnesses:*  
*Samuel A. Apur*  
*George Andrews*

*Inventors:*  
*W. Jones and M. Collins*  
*By* *R. H. Eddy*

## UNITED STATES PATENT OFFICE

WM. JONES AND M. H. COLLINS, OF CHELSEA, MASSACHUSETTS.

## IMPROVED AERO-GAS BURNER.

Specification forming part of Letters Patent No. 56,049, dated August 7, 1896.

*To all whom it may concern:*

Be it known that we, WILLIAM JONES and MICHAEL HENRY COLLINS, of Chelsea, in the county of Suffolk and State of Massachusetts, have invented an Improved Aero-Gas Burner; and we do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a top view, Fig. 2 a side elevation, and Fig. 3 a vertical section, of it.

The base part A of the burner we construct as a separate piece with reference to the body portion B, and connect the two by means of a male screw, *a*, and a female screw, *b*. Extending from the female screw in radial directions is a series of air inlets, *c c*.

A discharge passage, *d*, leads up through the body B and into a hollow dome or deflecting cap, C, provided with a series of eduction passages or holes, *e e e*, leading out of it near its base.

The lower part A of the burner is made with or has a female screw, *f*, formed in it for the purpose of enabling it to be screwed upon a gas pipe or conduit. From the space within the screw *f* a passage, *g*, extends upward, and terminates in a smaller passage or hole, *k*, leading out of the top of the screw *a*.

The hole *k* is made so as to determine the amount of gas which, under ordinary pressure, is to be admitted into the passage *d*.

By removing the cap C, which simply fits on the top of the part B as the cover of a box is adapted to the body of such box, the ignited column of gas and air may be burned on the top of the part B; but when the cap C is in place on the part B the aero-gas column will be driven against the central part of the reflecting dome C, and by it will be deflected to and be caused to flow out of the several orifices *e*, where it may be inflamed. By such means the combustion will be spread and divided into numerous jets.

The air to mingle with the stream of gas,

when passing into the passage *d*, will enter the holes *c c*, and pass into the space over the screw *a*, and from thence it will rush into the said passage *d*, when it will commingle with the gas and may be burned with it at the place or points of their discharge.

By revolving the part B on the screw *a* we can entirely close the orifices *c c*, or we can open them more or less, so as to gauge or determine the amount of air which it may be desirable at any time to admit into the passage *d*. The air and gas so mixed will burn with a blue flame and give out much more heat than can be obtained from the gas alone.

By screwing down the part B, so as to entirely cover the air inlets, no air will enter the burner, and consequently the gas alone will be inflamed on its top. Thus we are enabled to employ the burner for the purposes of illumination as well as those of heat.

We do not claim as our invention an aero-gas burner made with inlets for admitting air to the gas after its introduction into such burner.

We claim—

1. The improved aero gas burner—that is, one as made with or having a means of closing and more or less opening its air inlet or inlets, as specified.

2. The combination of the removable deflecting dome or cap C, made with eduction orifices in it and near its base or lower part, with the aero gas burner, as specified.

3. The peculiar mode, as described, in which to construct the aero gas burner—viz., by uniting its two parts A B by screws *a b*, and arranging the air inlet holes of the upper part A, with respect to such screws, in manner as specified.

WM. JONES.  
M. H. COLLINS.

Witnesses:

R. H. EDDY,  
F. P. HALE, Jr.



**DEFENDANTS' EXHIBIT N**

**Patent No. 66,021—Lighting Device—W. E. Heath—  
June 25, 1867.**

W. E. HEATH.  
Lighting Device.

No. 66,021.

Patented June 25, 1867.

Fig. 1

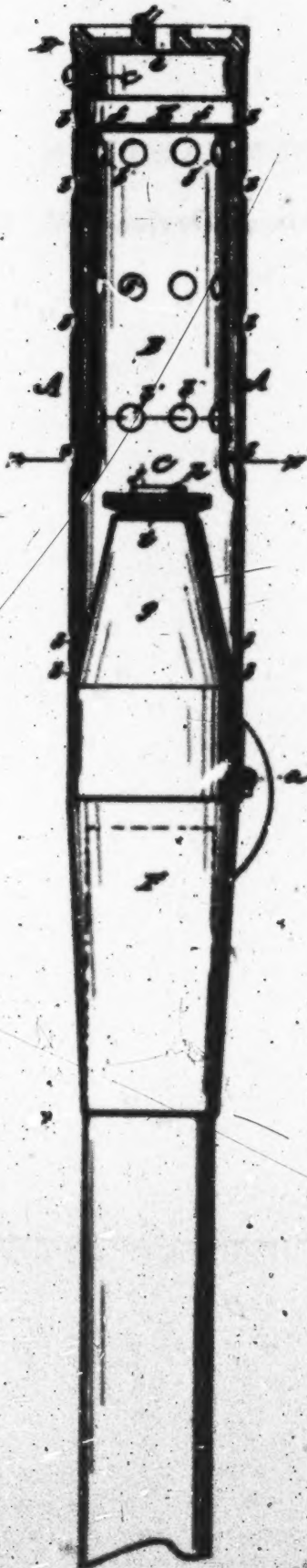


Fig. 4

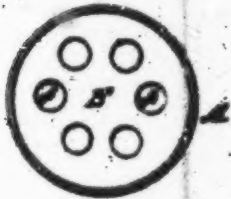
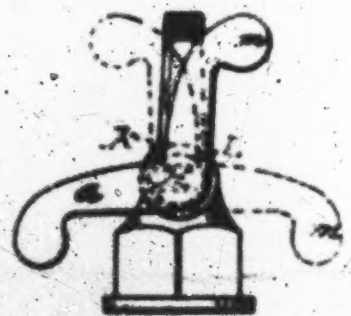


Fig. 2



Fig. 3



Witnesses:

H. A. Loh  
J. H. Loh

Inventor:

W. E. Heath



# United States Patent Office.

WILLIAM EDWIN HEATH, OF PEMBROKE TERRACE, GREAT BRITAIN,  
ASSIGNOR TO JOSEPH WEATHERBY BARTLETT, OF NEW YORK CITY.

Letter Patent No. 61,021, dated June 25, 1897.

## IMPROVED TORCH FOR LIGHTING GAS.

The Schedule referred to in these Letters Patent and making part of the same.

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, WILLIAM EDWIN HEATH, of Pembroke Terrace, Gloucester Road North, in the county of Middlesex, Kingdom of Great Britain, have invented "a new and improved Mode of Lighting Street and other Gas Lamps;" and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The said invention consists chiefly in the construction of a lamp, with a peculiarly constructed case or covering, in which, while allowing a free entrance to the air in sufficient quantities to support the combustion of the said lamp, will yet prevent the flame thereof being extinguished by the wind or rain when the lamp is being carried through the streets. The said invention also consists partly in the means for opening and closing the cocks of the gas-burners when the same are lighted and extinguished.

#### Description of the Drawings.

Figure 1 is a longitudinal section of the apparatus.

Figure 2 is a transverse section of the same on the line *x x*, fig. 1.

Figure 3 shows a burner provided with the required means for operating the cock thereof.

Figure 4 is a plan of the top of the interior tube.

Like letters refer to corresponding parts in each of the figures.

The case or cover consists of an outer and inner tube, A and B, the comparative diameters thereof being such that when the latter is placed inside the former an annular space is left between the two. The outer tube is extended to fit over the end of the lamp C, to which it is secured by the catch *a*. These tubes are formed of tin or other suitable metal, and are provided with the holes or perforations *b* through which air is admitted to the lamp. The two tubes are so arranged, with regard to each other, that the perforations *b*, in the outer tube A, lie between those in the inner tube B, as shown in figs. 1 and 2, so that the air in entering through the apertures *b*, in the outer case, is checked and prevented entering directly into the case or cover. By this means the flame of the lamp, while freely supplied with air, is effectually sheltered from the effects of the wind and rain, and the apparatus can be safely carried in the open air without danger of extinguishing the said flame. The outer case A is also extended above the inner tube B, and is provided with a cap or top, D, which is secured to the former by the screw *e* or by other suitable means. The said cap is formed with the boss or projection *d* around the aperture *c*, to prevent the entrance, through the said aperture, of water, which in wet weather might be caught and held by the said cap. The raised rim is provided to enable the burner cocks to be readily opened and closed. The top of the inner tube B is also provided with a cover, E, provided with the apertures *f*.

The lamp C is by preference constructed of brass, and of suitable form and size to hold conveniently the required quantity of oil. The neck *g* of this lamp is made conical or tapering, and is provided at its upper end with a flange or rim, *h*, which, for convenience, is formed on the screw *i*. The said lamp is also provided with a wick-tube, *j*, wherein a wick is introduced in the ordinary manner. The lamp C is also furnished with the socket F, which is by preference formed of tin and soldered to the lower part of the said lamp. One end of a light pole, or rod of ash, or other suitable wood or material, is inserted into this socket, and the apparatus is thereby conveniently carried from place to place with its lamp burning.

To enable the apparatus to be effectually used it is necessary that the plugs of the burners to be lighted thereby should be provided with the double handle G, represented in fig. 3, which may be easily applied to ordinary gas-cocks already in use, by forming a flange on the double handle to correspond with the handle of the said cocks, and uniting them by screws or rivets. The plug H is prevented turning more than a quarter of a revolution in either direction, either by means of the recess *k*, or by providing the plug with two of the pins or stops *l*. When the burner is to be lighted the apparatus is inserted through the bottom of the lamp, till its end, coming in contact with the handle, turns it over into the position represented in dotted lines. The cock of the burner is then opened, and the gas escaping therefrom, entering through the apertures *b* and *b'*, comes in contact with the flame of the lamp C and is thereby lighted. To turn off the gas the apparatus is again inserted through the opening in the bottom of the lamp, till it strikes the wing *m* of the handle G, which is thereby turned back into the position shown in full lines in fig. 3, and thereby closes the burner.



What I claim as my invention, and desire to secure by Letters Patent, is—

1. The construction of the double case or cover having the perforated tubes A and B arranged one within the other, for the purpose and substantially in the manner set forth.
2. The double handle G, adapted either for burners constructed as shown in fig. 3, or for ordinary gas-burners, for the purpose and substantially in the manner set forth.
3. The apparatus consisting of the tubes A and B, cap D, lamp C, and socket F, constructed and combined for the purpose and substantially in the manner set forth.

W. E. HEATH.

Witnesses:

W. R. LAKE,  
GEORGE HASSETINE.

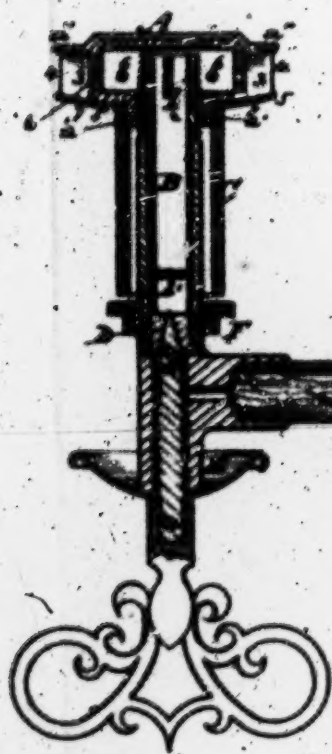
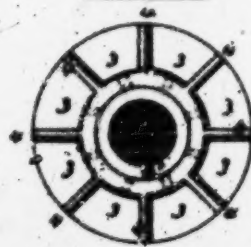
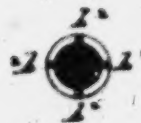
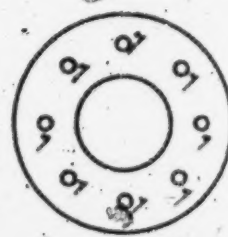
**DEFENDANTS' EXHIBIT N**

**Patent No.—116,573—Radiating Hydrocarbon Burners  
—Michael B. Dyott—July 4, 1871.**

*Michael B. Dyott's Impl in  
Radiating Hydro-carbon Burners*

116573

PATENTED JUL. 4 1871

Fig. 1.Fig. 2.Fig. 3.Fig. 4.Witnesses:

*Wm. Morrison*  
*Wm. H. Morrison.*

Inventor:

*Michael B. Dyott*



# UNITED STATES PATENT OFFICE.

MICHAEL B. DYOTT, OF PHILADELPHIA, PENNSYLVANIA.

## IMPROVEMENT IN VAPOR-BURNERS.

Specification forming part of Letters Patent No. 116,573, dated July 4, 1871.

To all whom it may concern:

Be it known that I, MICHAEL B. DYOTT, of the city of Philadelphia, in the State of Pennsylvania, have invented certain Improvements in Radiating Vapor-Burners for Lamps, of which the following is a specification:

The first part of my invention relates to the separation of radiating jets of mingled air and hydrocarbon vapor by surrounding them respectively with projecting guards for the purpose of affording thereby extended heating surfaces around the jets, protecting the ignited jets from accidental currents of air, and producing greater expansion, brilliancy, and uniformity in the flames radiating therefrom. The second part of my invention relates to the introduction of a slender stream of fresh external air into contact with each of the jets within the surrounding guards, by means of a small vertical hole made through the under side of the said guard; the object of this part of my invention being to further whiten the flame by intensifying the combustion of the said vapor jet. The third part of my invention relates to the attachment, to the under side of the burner-head, of a hollow cylinder concentric with a perforated tube, which mingles and conducts the air and vapor together to the said head so as to form an annular guard, open at its lower end, around the said perforated tube; the object of this part of my invention being to protect the said perforated tube from all lateral currents of cold air and to better protect it from any danger of having the perforations accidentally obstructed. The fourth part of my invention relates to the extension of the vapor and air-mingling and conducting-tube upward nearly to the under side of the top plate of the burner-head, and slotting or perforating that part of the same which thus projects within the head, for the purpose of giving the same more heating surface and also causing a more uniform flow of the air and vapor through the said head.

Figure 1 is a vertical central section of the burner of a hydrocarbon lamp embodying my invention. Fig. 2 is a plan view of the under side of the top plate of the burner-head without its bottom plate. Fig. 3 is a plan view of the said bottom plate. Fig. 4 is a plan view of the slotted upper end of the air and vapor-mingling and conducting-tube of the burner.

The head A of the burner consists of a short

cylinder closed at its upper end and having a central opening surrounded by a downward-projecting flange, *a*, in its lower end, whereby it is screwed fast over the open upper end of the perforated tube B, which mingles and conducts the vapor and air into the said head. Around the upper end of the cylindrical head A there is a flange, *a'*, which forms the cover of a series of apartments, 3 3, produced by radial partitions 4 4.

The open under sides of the said apartments 3 are closed by a disk, 5, (see Fig. 3,) which fits around the flange *a'* and is held in close contact with the radial partitions by means of the hollow cylinder C, which is screwed firmly up against the disk, when the same are so applied around the flange *a'*. (See Fig. 1.) The lower end of the tube B is screwed fast to the upper end of the boss D which contains the valve-stem *d'* and its seat, and communicates with the wick-tube *d''* that leads to the fountain or reservoir—not shown. Just above the junction of the tube B with the boss D there is a surrounding series of small air-holes, *b'*, in the former, and through these holes the air enters the tube and becomes mingled with the vaporized fluid rising from the valve below. Around the lower end of the tube B a traversing flange, F, is fitted so that it can be moved toward or from the open mouth of the cylinder C, for the purpose of regulating the flow of air into the tube to suit the requirements of the particular hydrocarbon fluid used in the lamp. The upper end of the tube B has vertical slots *b'' b''* cut in two vertical planes which are at right angles to each other. (See Figs. 1 and 4.) A jet-hole, 6, is made through the middle of the back part of each of the apartments 3 into the interior of the head A, and also an air-hole, 7, leading into each of the compartments 3 through the bottom of the latter. (See Figs. 1 and 3.) In starting the burner the valve is opened and the little dish E filled with some naphtha or its equivalent, and ignited, whereby the boss D, tube B, and head A become heated sufficiently to vaporize the hydrocarbon liquid running through the valve, and also to warm the air which enters the series of holes *b'*, the said vapor and air together passing into the heated head A and escaping through the jet-holes 6 in radial streams, which, becoming ignited and supplied with fresh streams of air from the holes 7, the required brilliant radial jets of flame are produced, the said jets of

flame keeping the head A and tube B sufficiently heated to keep up the vaporization of the hydrocarbon fluid rising through the valve after the naphtha in the dish E has become consumed.

I do not intend to confine the construction of the head A to the mode described, as it is obvious that the same may be constructed by corrugating the outer edge of the flange a", so as to form the apartments 3, or cast solid and the apartments or cavities drilled out, or casting them with the head.

I claim as my invention—

1. The apartments 3 3, in combination with the vapor-jet holes 6 6, when the said apartments are each formed so as to be open only at the perimeter of the burner-head and the said vapor-

jet holes each arranged so as to discharge its jet of vapor horizontally through its particular apartment, substantially as and for the purposes hereinbefore set forth.

2. The fresh-air-supplying holes 7 7, in the apartments 3 3, in combination, respectively, with the radiating jet-holes 6 6 in the head A, substantially as and for the purposes hereinbefore set forth.

3. The annular guard C, when constructed and applied substantially as and for the purposes hereinbefore set forth.

MICHAEL B. DYOTT.

Witnesses:

BENJ. MORISON,  
WM. H. MORISON.

**DEFENDANTS' EXHIBIT N**

**Patent No. 147,496—Lamp Burners—W. Hathaway—  
February 17, 1874.**

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W. HATHAWAY.  
Lamp-Burners.

No. 147,496.

Patented Feb. 17, 1874.

Fig. 1.

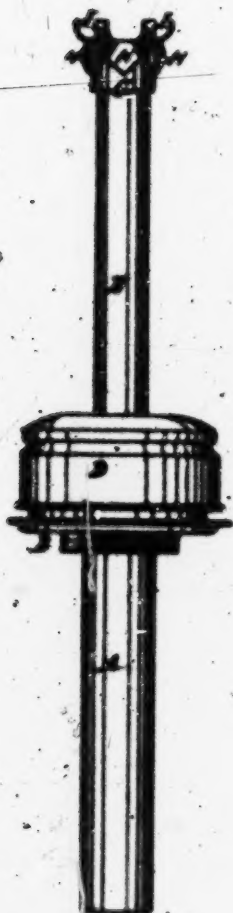
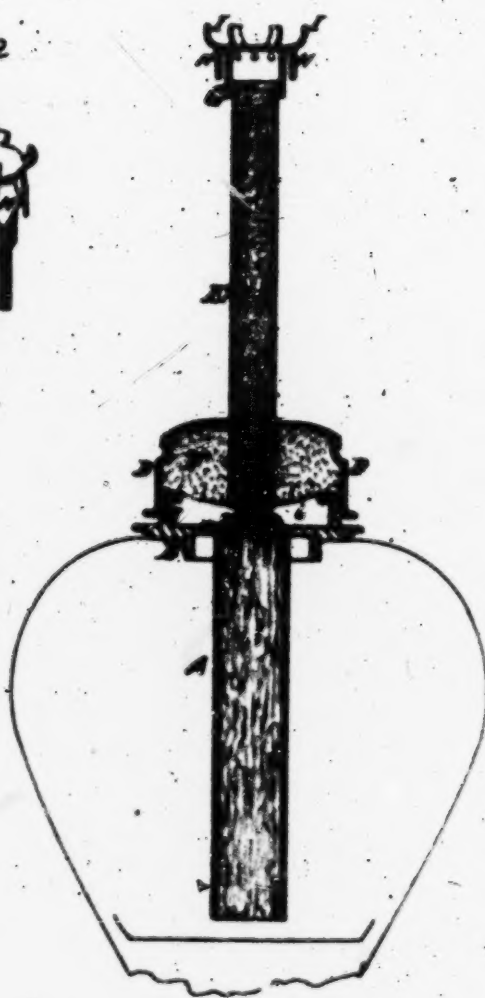


Fig. 2.



Fig. 3.



Witnesses

John L. Dorne  
C. Milton Richardson

Welcome Hathaway  
by Dewey &  
Atty's

# UNITED STATES PATENT OFFICE.

WELCOME HATHAWAY, OF OPHIR, CALIFORNIA.

## IMPROVEMENT IN LAMP-BURNERS.

Specification forming part of Letters Patent No. 147,496, dated February 17, 1874; application filed December 18, 1873.

*To all whom it may concern:*

Be it known that I, WELCOME HATHAWAY, of Ophir, county of Placer, State of California, have invented an Improved Burner for Lamps; and I do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention or improvement without further invention or experiment.

My invention relates to an improved burner which is especially adapted for burning gasoline and other light products of a similar nature, such as are brought to the burner and vaporized previous to being ignited.

My invention consists in a cap or coupling for holding the upper part of the wick tube, and so constructed that it contains a removable non-conducting substance and a small gas-chamber. It also consists in a peculiarly-constructed burner, as more fully hereinafter described. A combination of inflammable and non-inflammable substances is employed to conduct the gasoline or other fluid to the vaporizer and burner.

Referring to the accompanying drawing for a more complete explanation of my invention, Figure 1 is a side elevation of my device. Fig. 2 is a view of the burner or cap. Fig. 3 is a sectional elevation of the device.

A is the tube, which is made of such length that it will reach from near the bottom of the lamp or receptacle for the liquid to a point just above the top of it. A screw-cap, B, fits into the top of the lamp in the ordinary manner, and just above this screw is another screw-cap, C, which forms the lower part of the coupling. The upper part of the coupling D fits down upon the screw C, and has a hole through its top somewhat larger than the tube E. The interior of the part D is closely filled by a cork, F, through which the tube E passes, fitting closely, and is thus prevented from touching the sides of the coupling D. This makes the device non-conducting, and no matter how hot the tube E may become, the heat will not pass down so as to affect the tube A. A broad flange is formed upon the top of the screw C, and when the parts are screwed together, a tight joint will be formed by the cork which presses upon the flange, and a small gas-chamber, G, left beneath the cork.

The lower tube A may be filled with cotton-wicking; but the upper tube E should be filled with asbestos, which will not be acted upon by heat, the asbestos just resting upon the wick when the parts are united.

The burner or vaporizer G is placed at the top of the tube E, and consists of a cap which fits upon the top of the tube. This cap is closed at the top, and has a series of horizontal holes around it near the top. A series of lips, H, are formed to bend down from the top all around the cap and between the jet openings, so that each jet passes out between two of these lips, and is thus protected from air-currents, at least while the lamp is being carried from place to place, so that it is not easily extinguished. Above the jet-openings are a series of lugs, I, which may be bent upward or more horizontally if it is necessary to have a greater heat for more perfect vaporization and combustion; and by this construction I am enabled to make my burner adjustable.

Different caps of various sizes and shapes may be employed for larger or smaller lamps; but by means of the lips H and adjustable projections I, I am always enabled to regulate and protect the flame.

The coupling C D, with its non-conducting packing, renders it impossible to overheat the tube in the lamp, while, by extending the tube A to the bottom of the lamp inside, it will not be possible to ignite the liquid from the burner.

By making the tube E somewhat smaller than the tube A, the liquid will be carried to the burner more readily.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The burner G, consisting of the horizontally-perforated cap provided with the lips H and the adjustable lugs I, substantially as and for the purpose herein described.

2. The bisected wick-tube A E, in combination with the flanged screw cap C, cap D, and removable non-conducting material F, constructed and arranged to form the gas-chamber G, as set forth.

In witness whereof I hereunto set my hand and seal.

WELCOME HATHAWAY. [L. S.]

Witnesses:

JOHN L. BOONE,

C. MILTON RICHARDSON.

**DEFENDANTS' EXHIBIT N**

**Patent No. 181,030—Torches for Lighting Street Lamps  
—F. Billingham—August 15, 1876.**



F. BILLINGHAM.

TORCHES FOR LIGHTING STREET LAMPS.

No. 181,030.

Patented Aug. 15, 1876.

FIG. 1.

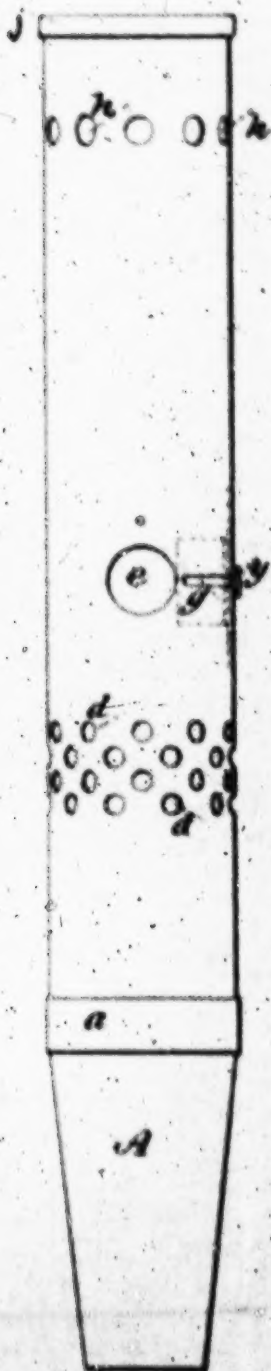


FIG. 3.

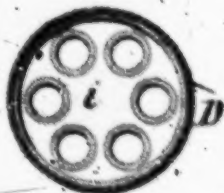


FIG. 4.



FIG. 5.

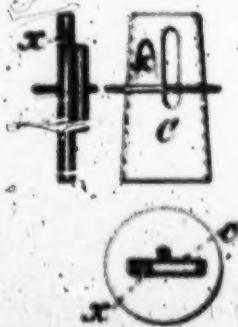
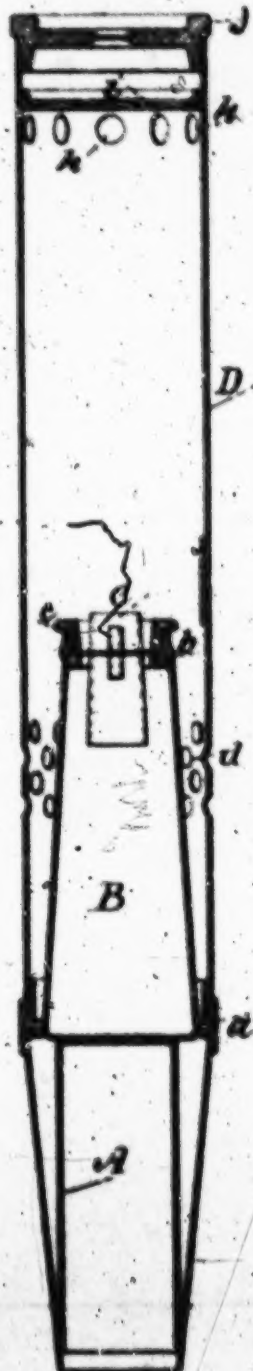


FIG. 2.



WITNESSES.

*Wm. H. Smith*  
*John. Cook*

*F. Billingham by A. Sidney Dimes atty.*

INVENTOR.

# UNITED STATES PATENT OFFICE.

FRANCIS BILLINGHAM, OF NEW YORK, N. Y., ASSIGNOR TO E. P. GLEASON MANUFACTURING COMPANY, OF SAME PLACE.

## IMPROVEMENT IN TORCHES FOR LIGHTING STREET-LAMPS.

Specification forming part of Letters Patent No. 181,030, dated August 15, 1876; application filed July 30, 1876.

To all whom it may concern:

Be it known that I, FRANCIS BILLINGHAM, (assignor to the E. P. GLEASON MANUFACTURING COMPANY,) of the city, county, and State of New York, have invented, made, and applied to use Improvements in the Construction of Torches for Lighting Street-Lamps; and that the following is a full, clear, and correct description of my invention, reference being had to the accompanying drawing, making part of this specification, and to the letters of reference marked thereon, in which—

Figure 1 is a side elevation of my improved torch. Fig. 2 is a sectional view of the same. Fig. 3 is a view of the top of the torch, the cap being removed. Fig. 4 is a view of the portion of the torch provided with sliding plate and opening for lighting the lamp. Fig. 5 are views showing the construction of the wick-tube.

In the drawing, like parts of the invention are pointed out by the same letters of reference.

The nature of the present invention consists in improvements, as more fully hereinafter set forth, in the construction of torches for lighting street-lamps; the object of the invention being the production of a torch for lighting street-lamps efficient in operation, and produced at a low cost.

To enable those skilled in the arts to make and use my invention, I will describe the construction and operation of the same.

A shows a socket formed of tin or any suitable metal, in which may be inserted one end of the pole of wood or suitable material for supporting the torch. The upper portion of the socket is flanged, as at a, and upon the interior of the same is cut a screw-thread, with which engages a screw-thread formed upon the base of the upper portion of the torch, as hereinafter described. B shows the lamp soldered or attached in any convenient manner to the socket A. This lamp is made conical, and in it is received the oil to be supplied to the wick. C shows the wick-tube of the lamp made in ordinary manner, save that a portion of the metal of which the tube is formed is cut lengthwise, and is then forced in and beyond

the face of the interior of the tube, and forms, as it were, a lip or tongue, x, projecting inward, and serving to retain the wick in position within the tube C. The top of the lamp is flanged, as at b, and provided with a screw-thread, with which, after the wick-tube has been placed in position, a threaded cap or nut, c, engages, and holds the wick-tube C in position. The upper portion of the torch consists of a tube, D, screw-threaded at its base to engage with the upper portion of the socket A, and intended to be placed over the lamp B. The tube D is provided with a series of perforations, d, so positioned that when the tube D is united to the socket A these perforations d shall be about midway between the base and the top of the lamp, and are intended to allow air to be supplied to the flame to support combustion. It is also provided with an opening, e, placed so that when united to the socket A this opening shall be a little above the top of the wick-tube C, and thus admit of the lighting of the wick without disconnecting the upper and lower portions of the torch. The openings, after the lamp has been lighted, is closed by a sliding plate, f, placed upon the interior of the tube D, and is retained in position, and moved forward or back, by means of a headed pin, g, passing through a slot, g, in the tube D, and having its bearing in the plate f. The tube D is further provided with a series of perforations, h, near its upper end; and upon the interior, a short distance above these perforations h, is a perforated disk of metal, i, for deflecting the flame. The upper end of the tube D is threaded upon its interior, and with the same engages the threaded base of a cap or disk, J, secured upon the upper portion of the torch, to prevent the extinguishment of the same from rain or other causes.

Such being the construction, the operation may be thus described: The lamp is first filled, the wick placed in the wick-tube, and retained in the proper position therein by the lip or tongue x, formed as described, and the upper portion D of the torch is secured upon the lower portion of the same. The plate f may now be drawn away from its position within the opening e in the tube D, and, a lighted match having been inserted into the same, the wick

of the lamp is lighted. The opening *e* is then closed by moving forward, by means of the headed pin *y*, the plate *f*, which fills the opening.

To light a street lamp: The cock of the same having been opened to allow of the supply of gas to the burner, the openings or perforations *h* are brought into proximity with the burner, and the flame, issuing through these perforations *h*, and deflected by the disk of metal *i*, lights or ignites the gas. As previously stated, air is supplied to the lighted wick through the perforations *d*, and combustion is thus maintained.

When desired to extinguish the lamp the sliding plate may be withdrawn from its position within the opening, and the lamp may be blown out.

A torch thus made can be afforded at a low rate to the consumer, and will be found efficient in its operation.

Having now set forth my invention, what I claim as new is—

The combination of the threaded socket *A*, lamp *B*, wick-tube *C*, threaded tube *D*, provided with the perforations *d* and *h*, and opening *e*, and sliding plate *f*, and disk *i*, and cap *J*, constructed and operating substantially as and for the purposes specified.

FRANCIS BILLINGHAM.

Witnesses:

E. P. GLEASON,  
E. F. GENNET.



**DEFENDANTS' EXHIBIT N**

**Patent No. 192,130—Lamps for Heating a Tailor's Goose  
—J. Reekie—June 19, 1877.**

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J. REEKE.

LAMPS FOR HEATING A TAILOR'S GOOSE.

No. 192,130.

Patented June 19, 1877.

Fig 1.

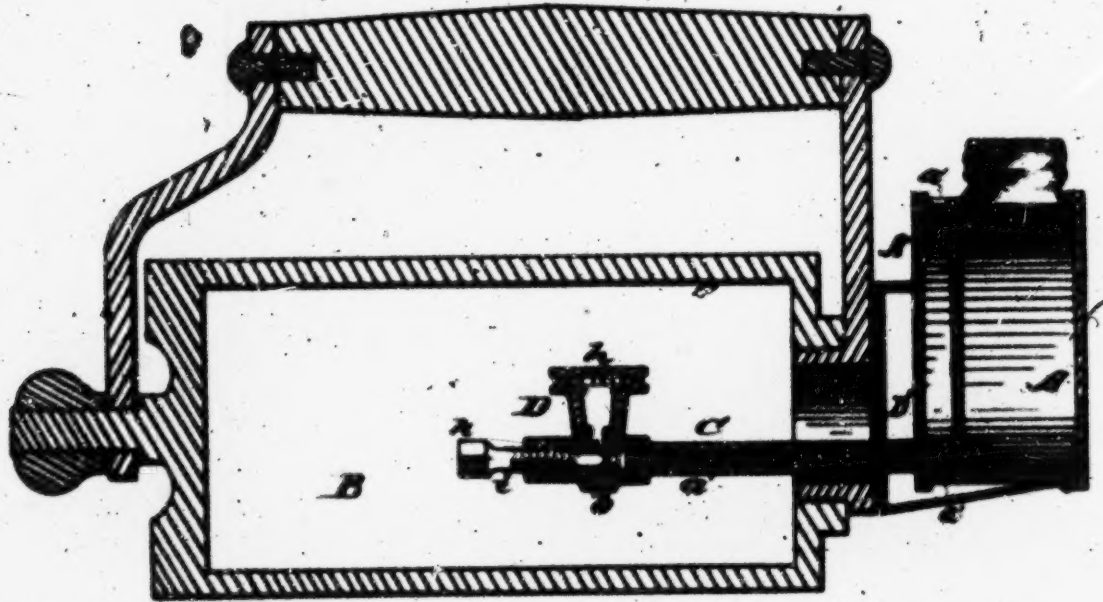


Fig 2.

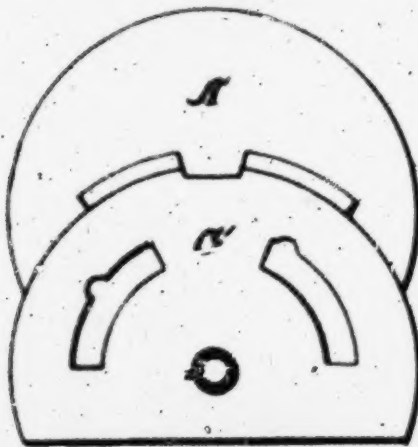


Fig 3.

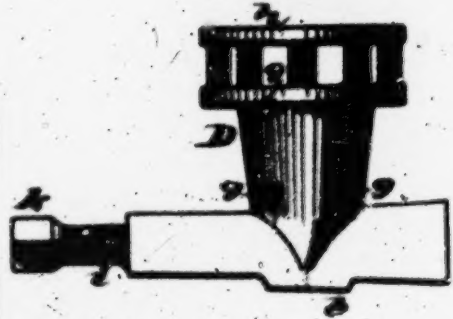


Fig 4.



WITNESSES  
J. F. Daham  
M. B. B.

INVENTOR  
James Reekie  
PER  
A. A. A. A.  
ATTORNEY.

## UNITED STATES PATENT OFFICE.

JAMES REEKIE, OF MARTLING, MISSOURI.

## IMPROVEMENT IN LAMPS FOR HEATING A TAILOR'S GOOSE.

Specification forming part of Letters Patent No. 192,180, dated June 19, 1877; application filed April 2, 1877.

*To all whom it may concern:*

Be it known that I, JAMES REEKIE, of Martling, in the county of Newton and State of Missouri, have invented certain new and useful improvements in Lamps for Heating a Tailor's Goose; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same.

The invention consists in a lamp capable of detachable connection with a tailor's goose, provided with a vapor-burner of peculiar construction, as hereinafter specified.

In the drawing illustrating my invention, Figure 1 is a longitudinal section of the lamp and goose connected. Fig. 2 is a front view of the lamp with the burner wick tube in cross-section, showing the means upon the lamp for securing it to the goose. Fig. 3 is a side elevation of the burner, and Fig. 4 a longitudinal section of said burner and a portion of the wick tube.

The essential characteristic of a goose adapted to receive my invention is a hollow interior, into which the burner of the lamp may extend. Such a goose, as ordinarily constructed, has means for the attachment of the lamp. It has also two ironing or smoothing surfaces, so that while one of such surfaces is being used the other is being heated ready for use.

My lamp consists of an oil-chamber, A, provided with a dead-air chamber, A', having openings *a'* at the bottom and top, to permit of the passage of air caused by expansion. The bust C' forms another air-chamber, D', open at the sides (shown in Fig. 1), to allow of the free passage of air. By this construction non-conducting air-chambers are interposed between the oil-chamber and the heated iron for the purpose of retaining the oil at its ordinary temperature.

The bust is provided with bayonet-slats, as seen in Fig. 2, or other means for securing it to a goose, B. From the lower end or bottom of this chamber extends a tube, C, in which the wick *e* is placed.

Detachably connected to the end of the tube C is the burner D. This burner is constructed of a tube, *b*, the interior or bore of

which is contracted at *c*, forming thereby a seat for a valve, *d*. This valve *d* may be continuous of a screw, *i*. The said screw *i* has a head, *k*, for adjusting it in the threaded portion *b'* of the tube *b*, which adjustment locates the valve *d* with reference to its seat *c*, thereby regulating the size of the opening in the tube.

A vertical slit, *e*, is made in the upper wall of the tube *b*, centrally of a core, *f*, that rises from the said tube. A number of air-inlets, *g*, are made in this core, and it is surmounted by a flame-deflector, A.

I do not confine the application of my lamp to a tailor's goose, for it may be used also with any self-heating sad-iron.

The operation is as follows: Sufficient heat being obtained to vaporize the fluid—gas, for instance, gasoline—the gas issues from the slit *e* into the core *f*, where the air-inlets are located, and where the gas is ignited, and, rising therein, finds an exit beneath the deflector, which latter serves to diffuse it horizontally, and thereby distribute the heat throughout the iron or goose.

This core, with its air-inlets and deflector, acts very much like a blow-pipe, and produces an intense and quick heat.

The quantity of vapor allowed to escape is regulated by adjusting the valve *d* in its seat so as to govern the size of the opening in the tube *b*.

By this construction a cheap oil or other inexpensive fluid may be substituted for alcohol, and better results obtained.

What I claim is—

1. The combination of the oil-chamber A, air-chambers A' and D', tube C, adjustable valve and burner, with a tailor's goose, all constructed, arranged, and operating as shown and described.

2. The tube *b*, adjustable valve *d*, slit *e*, and core *f*, in combination with a deflector, A, substantially as shown and described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

JAMES REEKIE.

Witnesses:

G. H. HOVEY,  
W. MACBURNIE.



**DEFENDANTS' EXHIBIT N**

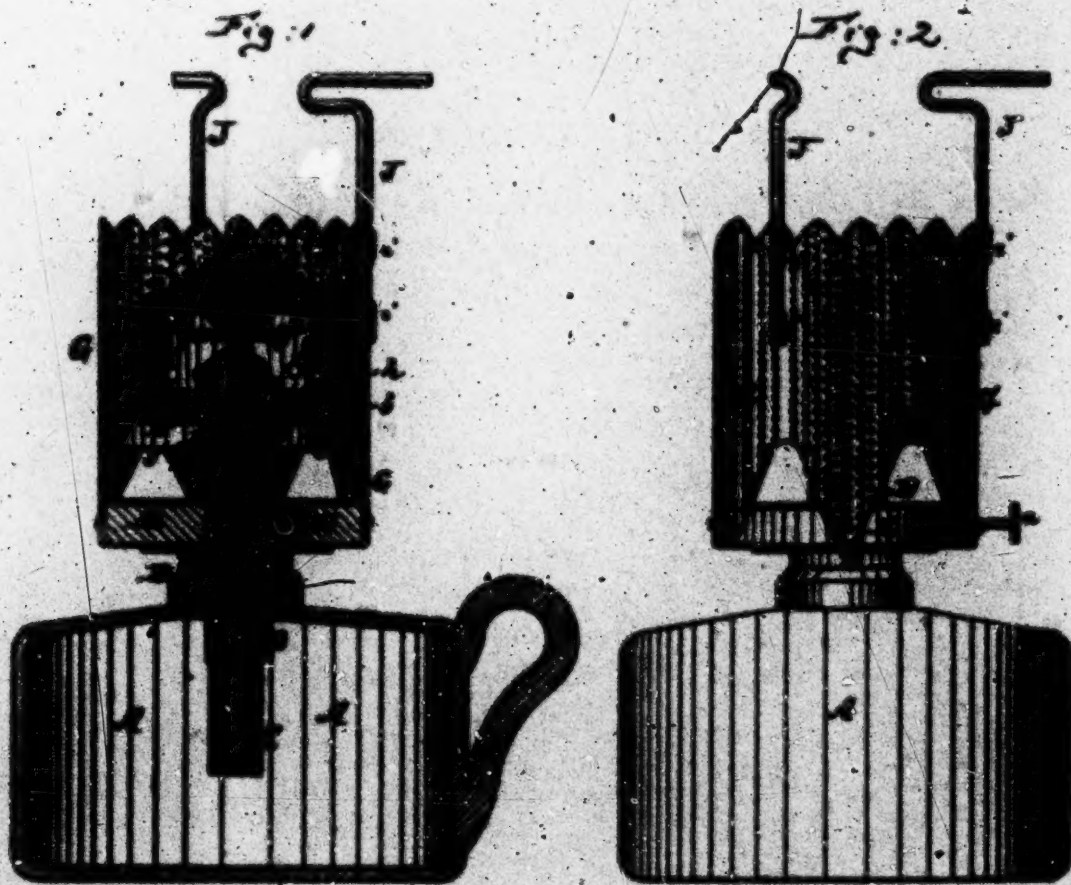
**Patent No. 193,796—Vapor Burners for Heating Pur-  
poses—T. R. Almond—August 7, 1877.**

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T. R. ALMOND.  
VAPOR BURNERS FOR HEATING PURPOSES.

No. 193,796.

Patented Aug. 7, 1877.



Witnesses

*W. H. Allen*

*J. H. Allen*

Inventor:

*Thomas R. Almond*  
by his attorney  
*W. H. Allen*



# UNITED STATES PATENT OFFICE.

THOMAS R. ALMOND, OF BROOKLYN, NEW YORK.

## IMPROVEMENT IN VAPOR-BURNERS FOR HEATING PURPOSES.

Specification forming part of Letters Patent No. 198,796, dated August 7, 1877; application filed December 15, 1876.

To all whom it may concern:

Be it known that I, THOMAS R. ALMOND, of Brooklyn, in the county of Kings and State of New York, have invented a new and improved Burner for Heating Purposes, of which the following is a specification:

Figure 1 is a sectional elevation of a lamp carrying my improved burner. Fig. 2 is a side view of the same.

Similar letters of reference indicate corresponding parts in both figures.

This invention relates to an improved lamp-burner for heating purposes, the object being to vaporize, by an inner flame, the fuel of the lamp, and to produce a heating-flame by igniting said vapors or other gases.

The invention consists, first, in the combination of a sliding wick-tube, which is moved up and down with the wick through a fixed annular plate, with a top plate, which, when drawn down, serves as an extinguisher.

The invention also consists in providing said annular plate with perforations, or with a perforated rim, and in combining it with a narrow superposed chamber, and with a perforated outer chimney, all as hereinafter more fully described; also, in the use of a hinged cap, and in the new arrangement of brackets for supporting the vessel to be heated.

In the drawing, the letter A represents the reservoir of a coal-oil lamp. B is the wick-tube, and C the wick thereof. The wick-tube is arranged to slide up and down in a hollow guideway, D, that projects from the lamp-reservoir. In this guideway the ratchet-wheel e, for moving the wick-tube, has its bearing.

A wooden or other bad heat-conducting block, E, is rigidly affixed to the tubular guideway D, and elevated sufficiently far from the reservoir A to keep the flame above from unduly heating the reservoir. This block, together with the tube D, is, by preference, covered with asbestos-paper or other non-combustible substance. The upper end of the stationary tube D terminates in an enlargement or flange, F, in form of an annular plate of slightly smaller diameter than the block E. The plate F has an upwardly-projecting perforated rim, G, or is itself perforated.

The wick-tube has an inner cross-bar, d, upon which is mounted the vertical stem e of

a top plate, f. This top plate is at a distance above the upper end of the wick, and larger in diameter than the wick, as shown in Fig. 1. By means of the ratchet-wheel e the tube B, wick C, stem e, and plate f are raised or lowered together.

The wick-tube embraces the wick to a short distance from the upper end of the wick. By having a sliding wick-tube I am enabled to raise the flame of the wick to a greater height within the burner without exposing a larger proportion of wick-surface to the action of the flame. The plate f serves the purpose of an extinguisher when drawn down upon the plate F.

G is a perforated tube, of a diameter equaling that of the block E. It is, at its lower end, fastened to the periphery of the block E, and extends upward, as shown. To the inner side of this perforated tube is secured the rim g of a short tube, H, which surmounts the rim or body of the plate F. The tube H is preferably of smaller diameter than the plate F, and has a connecting step or shoulder, A, that joins it to the rim g, as clearly indicated in Fig. 1. This shoulder A rests on the upper edge of the rim b, or directly on the perforated plate F, if the rim b is omitted. Shortly above the shoulder A the tube H is perforated with holes of considerably larger diameter than the holes of the tube G or rim b.

The upper end of the tube H is closed by a hinged cap, I, which can be swung open by hand or by raising the plate f against it.

J J are wire brackets placed into sockets i i, that are formed by bending and partly cutting the tube G, in manner clearly shown in the drawing. By this construction the brackets are removable and reversible, and yet firmly supported when used.

In use the flame is started by igniting the upper end of the wick and then closing the cap I upon the tube H. The wick-flame burns then in a chamber, H, to which a small proportion of air is admitted through the rim b or plate F, and from which gases can freely escape through the comparatively large holes in the tube H. In other words the flame is reduced to the bare possibility of existence, but not entirely stifled, and is thus utilized as a means of vaporizing all that proportion of



**DEFENDANTS' EXHIBIT N**

**Patent No. 270,587—Vapor Burner—W. Heston—January 16, 1883.**

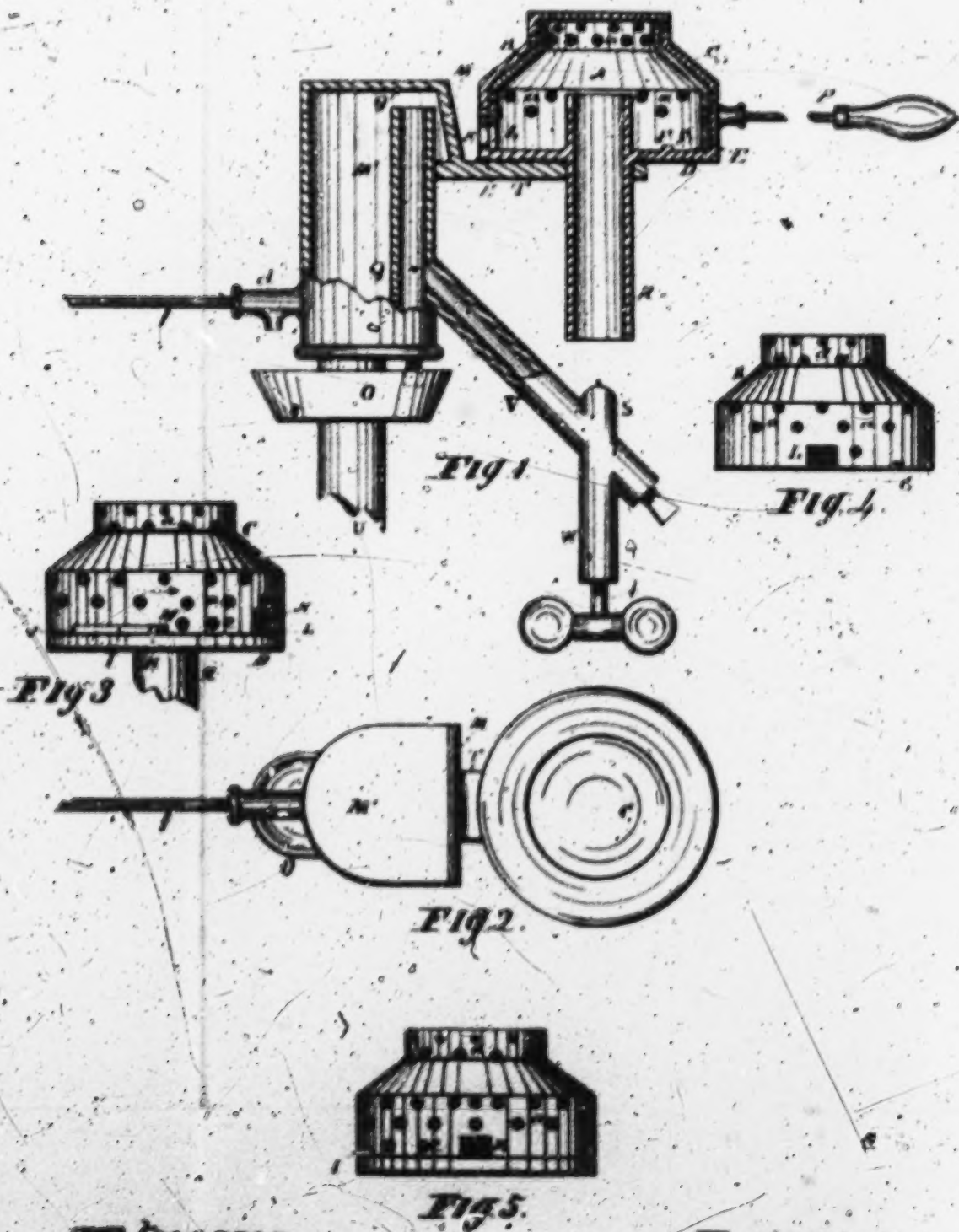
243

(No Model.)

W. HESTON.  
VAPOR BURNER.

No. 270,587.

Patented Jan. 16, 1883.



Witnesses,  
J. H. Burridge.  
W. H. Heston.

Inventor  
W. Heston  
J. H. Burridge  
Att'y

# UNITED STATES PATENT OFFICE.

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WILLIAM HESTON, OF MOUNT UNION, ASSIGNOR OF ONE-HALF TO JAMES E. INGERSOLL, OF BEDFORD, OHIO.

## VAPOR-BURNER.

SPECIFICATION forming part of Letters Patent No. 270,587, dated January 10, 1883

Application filed October 18, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM HESTON, of Mount Union, in the county of Stark and State of Ohio, have invented a certain new and improved Vapor-Burner; and I do hereby declare that the following is a full, clear, and complete description thereof.

This improvement relates to a vapor-burner, the nature of which consists of double perforated caps, one of which is stationary and the other movable for the purpose of regulating the flame-jets, and to cause a small jet to continue burning to avoid the trouble and delay of relighting.

The improvement also relates to the means employed for generating the vapor from the oil for combustion in the dome.

For a more full and complete description of the said improvements reference will be had to the following specification, and to the annexed drawings, making a part of the same, in which—

Figure 1 is a view of a vertical section in part of the vapor-burner; Fig. 2, a top view. Figs. 3, 4, and 5 are views of the perforated caps detached.

Like letters of reference refer to like parts in the several views.

The combustion-chamber A, Fig. 1, is inclosed by two perforated caps, B C, of which B is the inside stationary cap and C the outside movable one. The interior cap is adjustable, so as to fit on the inside of the flange E, and is prevented from turning by means of the lug or pin F, which projects from the base D in a slot, G, in the lower edge of the cap, as shown in Figs. 1 and 4. This pin and slot prevent the cap from turning; but it may be readily removed and replaced, as occasion may require. The exterior cap, C, fits down over the interior cap, and closes up the opening in the upper part or top of the interior one. The lower edge of the exterior cap, C, rests upon the flange E of the base D, while the interior cap is on the inside of the flange E, which flange prevents the inside cap from moving laterally, and thereby the exterior cap is also prevented from moving laterally, but is free

to turn horizontally, so as to open or close the perforations in the caps, respectively. The exterior cap is permitted to turn only a certain distance sufficient to regulate the gas-jet from the perforations a. This is attained by means of lug H, projecting from the upper edge of the flange E into the elongated slot or opening I in the lower edge of the exterior cap. The shoulders at each end of the opening determine the distance of the horizontal rotation of the cap, as lug H forms a stop for the shoulders. When full jet-flames are required the exterior cap is turned in the direction of the arrow, Fig. 3, until the shoulder J is brought in contact with lug H, or nearly so, which will close the openings K and L and open the perforations a in the respective caps. The volume of flame-jets may be more or less reduced by turning the exterior cap in a reverse direction of the arrow, which will close up the perforations a, as required, for less heat. This closing of the perforations is due to the blank spaces of the exterior cap covering over the perforations of the interior cap. This opening and covering of the perforations in the interior cap causes more or less volume of flame to issue from the combustion-chamber A. On turning the exterior cap so that the shoulder N will be in close proximity to the lug H, the perforations of the interior cap will be closed over by the blank spaces between the perforations of the exterior cap. In this position the openings K and L will coincide with each other and will have a flame-jet issue from the chamber A through them, and impinging on the face M of the generating-chamber M'; but as the volume of flame from these joint openings is much less than from the perforations of the caps there will be less heat imparted to the chamber M'. Hence less gas is generated from the oil therein, but sufficient will be evolved to produce a low constant flame, enough at any time to cause full jets to issue from the perforations on turning the exterior in the direction of the arrow, so as to increase the heat upon the generating-chamber from the openings. In this way, after the first lighting of the burner by means of the oil-cup O, it need not be resorted to, as the burner may be fully inflamed from the result-



ant effect of the jet from the joint openings K L of the caps. When the perforations are in full-open relation with each other, so that the maximum volume of jets is attained, the perforation c, Figs. 3 and 5, will then coincide with the opening L in the interior cap, Figs. 1 and 4, to cause a jet to pass from the combustion-chamber through this space, which otherwise would be blank, and to be impinged upon the generating-chamber. It will be noted that the opening L will at all times be in the same position, directly opposite the upper part of the generating-chamber, as seen in Fig. 1.

The turning of the exterior-cap is so regulated or determined by the lug H, in connection with the slot I and the shoulders J N, that the cap can only be turned a given distance, and when moved to the position seen in Fig. 3 the perforations a are closed and the openings K L made to coincide, so that a light low flame ensues therefrom, and on turning the cap C in the direction of the arrow the openings K L are closed and the perforations opened accordingly.

To the cap C is connected a handle, P, for turning it.

Connected with the base or floor of the chamber A is a conducting-tube, R, which is in open relation with the needle-valve mechanism S at its lower end, the upper end opening into the combustion-chamber, as seen in Fig. 1. The tube R is supported in a bracket, T, attached to the generating-chamber M', Figs. 1 and 2, by which the combustion-chamber is held in position. To the lower end of the generating-chamber is attached a supply-pipe, U, leading to the oil-supply tank. (Not shown, as it may be same as ordinarily used for this purpose.) In the interior of the generating-chamber is a vapor-pipe, Q, closed at the lower end and open at top into the generating-chamber, as seen at Q'. This vapor-pipe forms a part of the said chamber M'.

Extending from the vapor-pipe Q, and in open relation therewith, is a branch pipe, V, which connects with the needle-valve pipe W, in which is fitted the needle-valve, the stem of thereof being provided with a handle for operating in in the usual way.

Directly under the generating-chamber and attached to the pipe U is an oil-cup, O, Figs. 1 and 2, into which oil is conveyed from the lower part of the generating-chamber M' by means of the valve-cock d, which admits of more or less oil passing from the chamber M' into the cup, as may be required. The supply may be stopped entirely by closing the valve-cock, the stem of which is seen at f, Figs. 1 and 2. On the oil being conveyed to the generating-chamber M' and the cap applied,

as before stated, the ignition of the oil in the cup will convey heat to the generating-chamber, causing generation of vapor from the oil, which will pass through the pipes Q V to the needle-valve pipe or chamber, thence through the conductor R into the combustion-chamber, from which chamber it issues through the perforations and openings before set forth. A portion of the flame from the chamber A passes through perforations or openings adjoining the upper part of the generating-chamber, thereby supplying the required heat for the constant generation of the gas or vapor so long as the supply of oil is continued. The upper end of the pipe Q is in close proximity, at Q', to the upper end of the generating-chamber M', by which regurgitation of the oil through the pipes on igniting the burner is arrested, as the rapid generation of gaseous vapor above the oil in the chamber will have sufficient pressure above the oil to resist the ebullition of the oil engendered by the heat from the cup O when ignited, and thereby preventing its passage through the pipes to the combustion-chamber.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In vapor-burners, the two perforated caps B C, arranged one within the other, the interior one being stationary and the exterior one movable therein, and provided with openings K L, slot I, and lug H, in combination with the pipe R and needle-valve mechanism, substantially as described, and for the purpose set forth.

2. In vapor-burners, an improvement consisting of double perforated caps B C, provided with openings K L, the interior cap being stationary and adjusted to the floor of the combustion-chamber within the flange E, and the exterior cap, C, inclosing the said cap E and turning upon the same, in combination with the pipe R, generating-chamber, and needle-valve mechanism, substantially in the manner as described, and for the purpose specified.

3. In vapor-burners, the combustion-chamber having a stationary and movable cap, slot I, and pin H, with a pipe extending from the needle-valve mechanism into the interior of said chamber, in combination with the bracket T, generating-chamber, openings K L, and pipes Q V, arranged substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM HESTON.

Witnesses:

W. H. BURRIDGE,  
J. H. BURRIDGE.

(No Model.)

I. E. BLAKE & H. RAUCHFUSS.  
HYDROCARBON BURNER.

No. 453,335.

Patented June 2, 1891.

Fig. 2

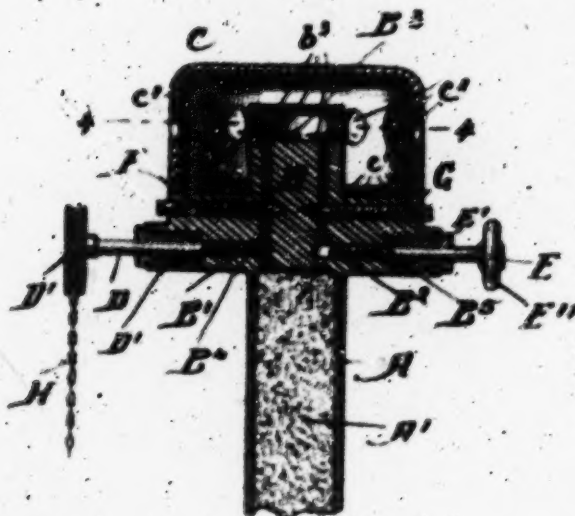


Fig. 1

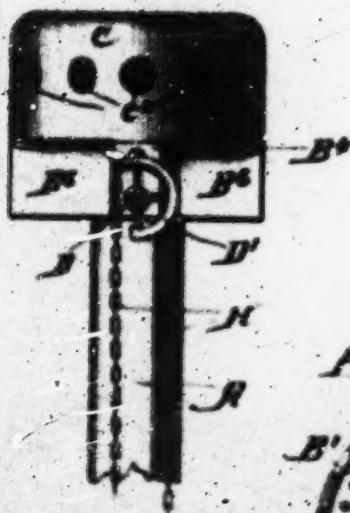


Fig. 4

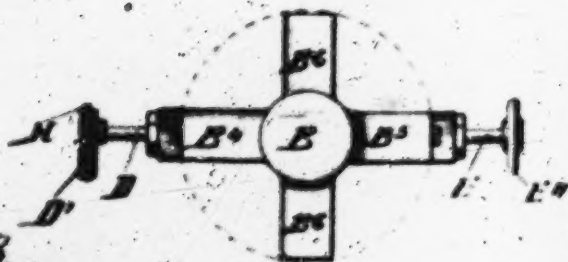
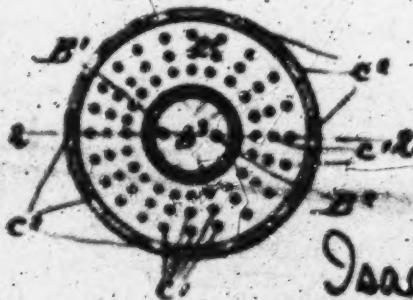


Fig. 3



Witnesses:  
Jas. Elliott  
Charles P. Chapman

Inventor  
Isaac E. Blake  
Herman Rauchfuss  
By Burton & Burton  
Attorneys



# UNITED STATES PATENT OFFICE.

ISAAC E. BLAKE AND HERMAN RAUCHFUSS, OF DENVER, COLORADO.

## HYDROCARBON-BURNER.

SPECIFICATION forming part of Letters Patent No. 453,335, dated June 2, 1891.

Application filed April 17, 1890. Serial No. 348,300. (No model.)

To all whom it may concern:

Be it known that we, ISAAC E. BLAKE and HERMAN RAUCHFUSS, citizens of the United States, residing at Denver, county of Arapahoe, and State of Colorado, have invented certain new and useful Improvements in Hydrocarbon Illuminating Burners, which are fully set forth in the following specification, reference being had to the accompanying drawings, forming a part thereof.

Figure 1 is a side elevation of our improved burner. Fig. 2 is a vertical axial section through the line 2 2 on Fig. 3, said Fig. 3 being a plan with the shield removed. Fig. 4 is a section at 4 4 on Fig. 1.

This application is for an invention related to another invention for which our joint application, Serial No. 348,301, is filed simultaneously herewith, and we do not design in this application to claim specifically anything which is shown in the other application above named.

This invention is designed to facilitate the use of hydrocarbon oils for illumination, and is adapted for use with the lighter and more volatile oils—such as naphtha or gasoline—which vaporize at a moderate heat.

It consists in improved devices whereby a minimum flame is maintained and protected from extinguishment and converted into a maximum flame when desired. The devices employed are designed also to make the maximum flame consist of radiating jets rather than a continuous integral flame.

In the drawings, A is the supply-tube and vaporizing-chamber, which is filled with any suitable absorbent and porous substance A', which checks the flow of the fluid to the burner and retains the heat after the burner is lighted, causing the fluid which is conducted into it to be vaporized in its pores. The tube or stem A is cast in one piece with or brazed at the upper end to the burner-tip B. Two ducts B' and B'' extend through the burner-tip from the chamber in the stem A to the spreading-chamber B<sup>2</sup>, formed in the upper end of the burner-tip B. This spreading-chamber might properly also be called a "vaporizing-chamber," since before the burner becomes hot enough to cause the formation of vapor in the stem A the liquid will be vaporized in this spreading-chamber B<sup>2</sup>. Fine orifices b<sup>2</sup> lead from the chamber B<sup>2</sup> through its wall out-

wardly, said orifices being arranged in a horizontal plane discharging radially from the chamber, and through them the vapor is discharged in jets and is ignited on the outer side of the chamber. The tip B is formed with four radial arms B<sup>4</sup> B<sup>5</sup> B<sup>6</sup> B<sup>7</sup>, extending horizontally from its base, and we provide the shield C, so named from its function, as hereinafter explained, which is a hollow cylinder having an opening through its base large enough to allow it to be passed down over the upper end of the burner-tip, and which rests upon the four radial arms B<sup>4</sup> B<sup>5</sup> B<sup>6</sup> B<sup>7</sup>. The base C' of the shield C is perforated, said perforations c' being distributed over its entire surface and designed to admit air freely into it from below. Its cylindrical wall is pierced by apertures c<sup>2</sup>, equal in number and in line radially with the orifices b<sup>2</sup>, respectively leading from the spreading-chamber B<sup>2</sup>.

Through the arms B<sup>4</sup> and B<sup>5</sup> holes are drilled into the ducts B' and B'', respectively, and screw-valves D and E, suitably guarded about their stems with stuffing-boxes D' and E', are provided, entering through said holes and seating across said ducts B' and B'', respectively. Directly above each of these valves simple screw-valves F and G are inserted through the arms D<sup>4</sup> and D<sup>5</sup>, respectively, and seated in and adapted to close the ducts B' and B'', respectively, above the seats therein of the valves D and E, respectively. These latter valves F and G are preferably made with slender tapering points, and their seats are of course similarly formed, whereby they are adapted to be very accurately adjusted. The valves D and E may not be so slender, but may cease more abruptly. The valve D we prefer to provide with a sheave-handle D'', to which a chain H may be connected for convenience in operating it. The valve E may have no handle at all, or may be provided with a handle E'', as shown; but the valves F and G are preferably without handles, but may be slotted at the exposed ends to be operated by a screw-driver. These latter valves are designed to be so tightly fitted in their threads as to require no stuffing-boxes, and to be adjusted not too easily even by means of a screw-driver, and incapable of adjustment by the fingers without a tool.



This burner is designed to be used in the following manner: The valve E being closed and the valves F and D being open and the valve G either open or closed, it being at this stage a matter of indifference whether it is open or closed, the fluid admitted through the pipe A and contained in the porous material A' flows up through the duct B', and overflowing in the chamber B' and flowing out through the orifices b', will be ignited upon the outside of the burner-tip. It will be understood that for this purpose the shield C may be temporarily removed. The valve D may now be closed, or so nearly closed as to admit a very slight quantity of oil past it, the oil which has overflowed and such additional quantity, if any, as may be supplied past the valve D burning freely until the entire burner-tip B and the tube A, connected to it, are sufficiently heated to cause the fluid contained in the porous contents A' of the tube A to be vaporized therein, so that the discharge from the orifices b' is no longer oil, but vapor. It will be understood that if the valve D has been closed entirely after the first discharge of oil past it, as described, it must be opened again before the oil so discharged is entirely burned up, in order that the vapor or vaporized oil in the tube A may be admitted to the burner-tip to maintain the flame. The valve D will now be opened wide, and the valve F will be screwed in until the discharge of vapor past it is limited to such amount as can be continuously generated in the chamber A. This amount and the consequent adjustment of the valve F will be determined by the judgment of an expert or by sufficient experiment to ascertain it reliably, and the valve F, having been once set at this position, need never be changed, except when a different grade of oil is to be used, which may change the conditions. The valve D being now closed entirely, and the valve E opened wide, the valve G will be adjusted to such position that it will admit past it only the least quantity of vapor, which will maintain the temperature of the burner at the vaporizing-point. This valve, being thus adjusted, will need no change unless a different character of oil is to be used, which may require a greater volume to maintain the same temperature, or which vaporizes at a different temperature. It will be seen that when the valves F and G are thus adjusted the flame may be increased from the minimum which can be maintained to the maximum that the burner is capable of supplying reliably by opening the valve D to any desired extent, and that, once lighted and properly adjusted, the flame will never be extinguished entirely, and the burner may therefore be operated with as great convenience as a burner fed by a gas-supply and provided with automatic lighting attachments, so that the process of first flooding the burner with oil and watching it until it begins to vaporize and then with care requiring an expert adjusting it to the proper

point each time it is used is dispensed with. If at any time it is desired to extinguish the burner entirely, as when the light is not to be required for a long time, as for several days or weeks, the valve E will be closed as well as the valve D; but in the ordinary intervals of use from night to night the valve E will be left open and the flame maintained at the minimum, controlled by the valve G, as described.

It will be apparent that the slight flame formed when the valve D is closed and the vapor is admitted only past the minimum valve G would be liable to be extinguished by drafts of air, and also that the large flame might be rendered unsteady and might be extinguished at some of the orifices momentarily by air-blasts accidentally directed upon it if no protection were afforded for the flame. To afford such protection is the purpose of the shield C. This shield has the bottom C' perforated, as already described, the intention being to admit an abundant supply of air to the flame, but to so thoroughly break it up that it shall be distributed evenly and not at any time reduced to a blast at any one point. The shield entirely encircles the burner-tip and is closed at the top, and has the apertures c', which are radially in line with the apertures b' in the burner-tip B. The apertures c', however, are very much larger than the orifices b', the latter being from one one-hundredth to one-fiftieth of an inch—that is, barely large enough to admit a fine needle—while the former—the apertures c'—are from three-sixteenths to three-eighths of an inch in diameter. The jets emitted from the orifices b' are directed toward the apertures c', and when the supply-valve is opened to such an extent as to produce actual illumination from the burner these jets shoot out through the apertures c'. When the burner is turned down—that is, when the valve D is closed, or nearly so—and the quantity of vapor admitted is that which is permitted by the valve G, the jets barely protrude from the orifices b', or at least do not extend far enough to be visible outside the shield C. In practice a bare blue point of flame is visible at the orifices b' when the supply of vapor is at the minimum as controlled by the valve G.

We claim—

1. In a vapor-burner, in combination with the fluid-supply-pipe and the burner-tip and a duct communicating from the supply-pipe to the tip, and the valve controlling such duct, the tip having peripheral jet-orifices in horizontal plane, through which the vapor is emitted radially, and a shield encircling and covering such tip and having peripheral openings in a horizontal plane radially in line with the jet-orifices, respectively, and through which the flame can extend when the controlling-valve is sufficiently opened, substantially as set forth.

2. In a hydrocarbon-burner, in combination with the supply-pipe and the burner-tip,

ducts which communicate with the supply and the tip, a limiting-valve seating in each of said ducts, one of such valves being adjusted to the minimum and the other to the maximum of the desired supply, the third valve controlling the duct which has the minimum limiting-valve, the burner-tip having peripheral jet-orifices in horizontal plane, through which the vapor is emitted radially, a shield C, encircling and covering such jet-orifices and having in a horizontal plane peripheral flame-orifices  $c^2$ , which are radially in line with the jet-orifices, respectively, whereby jets of flame emitted from the jet-orifices are caused to extend out separately and directly in a horizontal plane through said flame-orifices, substantially as set forth. This is a vapor-burner, in combination with a burner-tip having jet-orifices located in

a horizontal plane and discharging radially, a shield encircling and covering such tip and inclosing a chamber between the tip and the shield, the latter having peripheral apertures in a horizontal plane in line radially with the jet-orifices, respectively, and larger than the latter, whereby the flame formed at the jet-orifices is shielded from exterior currents of air until it is emitted through the shield-apertures, substantially as set forth.

In testimony whereof we have hereunto set our hands, in the presence of two witnesses, at Denver, Colorado, this 11th day of April, 1890.

ISAAC E. BLAKE.  
HERMAN RAUCHFUSS.

Witnesses:

C. B. COWELL,  
M. McMULLIN.

**DEFENDANTS' EXHIBIT N**

**Patent No. 755,864—Oil Stove—E. E. Florz—March 29,  
1904.**



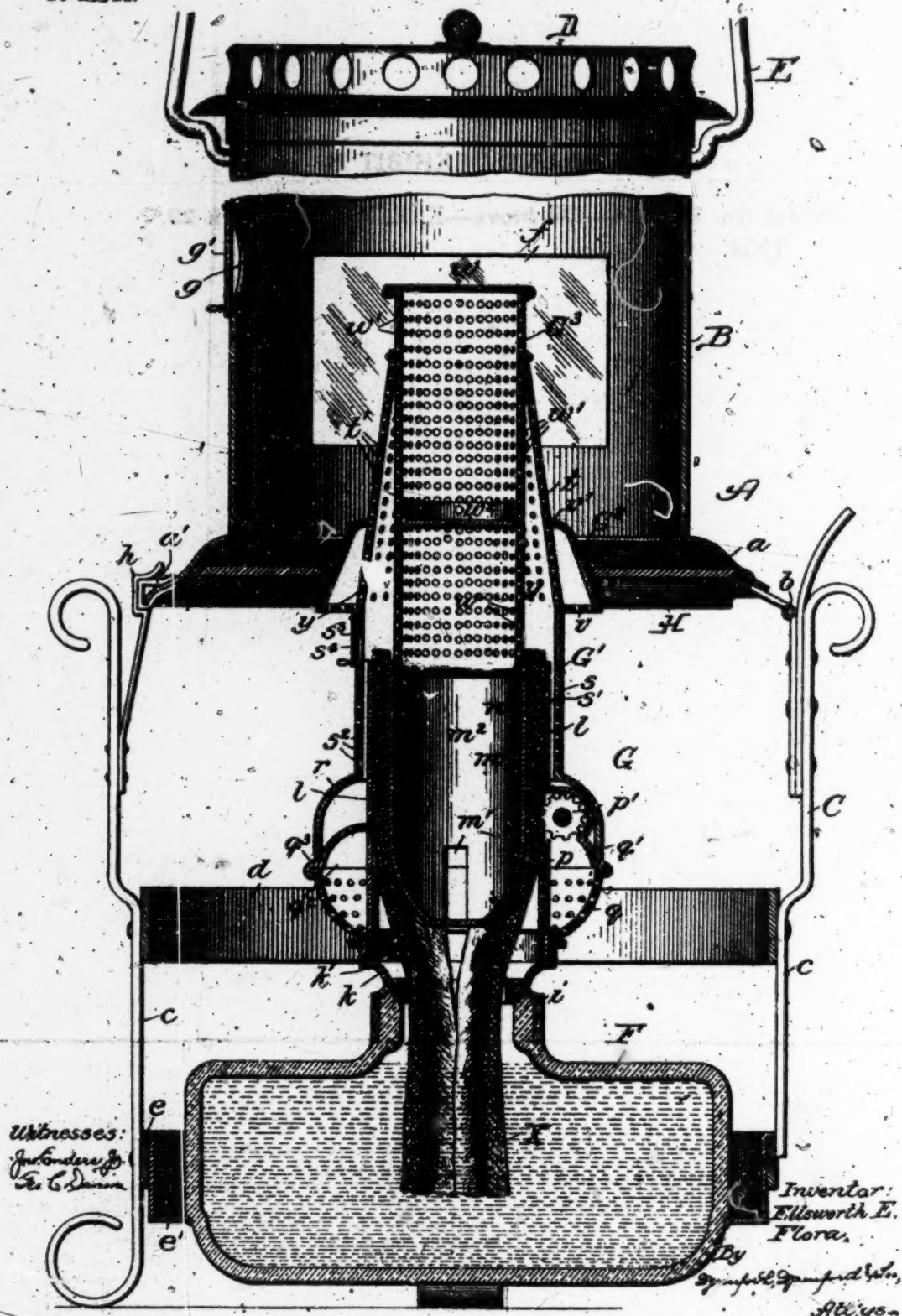
No. 755,834.

PATENTED MAR. 29, 1904.

E. E. FLORA.  
OIL STOVE.

APPLICATION FILED OCT. 9, 1902.

NO MODEL.



# UNITED STATES PATENT OFFICE.

ELLSWORTH E. FLORA, OF CHICAGO, ILLINOIS, ASSIGNOR TO THOMAS J. LOVETT, OF CHICAGO, ILLINOIS.

## OIL-STOVE.

SPECIFICATION forming part of Letters Patent No. 755,884, dated March 29, 1904.

Application filed October 9, 1902. Serial No. 126,468. (No model.)

*To all whom it may concern:*

Be it known that I, ELLSWORTH E. FLORA, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Oil-Stoves, of which the following is a specification.

This invention relates to improvements in stoves adapted for burning hydrocarbon oil.

My object is to provide an oil-stove to be employed more especially as a heater and of a particularly simple, compact, and safe construction for household use and capable of developing and radiating a large amount of heat at a minimum expense of oil.

My invention lies more especially in the general construction of the burner, as well as in details of construction thereof, as herein-after fully described and claimed.

The drawing is a broken sectional view of a stove constructed with my improvements, the upper end portion of the stove being shown in elevation.

The burner is particularly well adapted for use in small portable stoves; but the burner may be of any desired size, and, if desired, a single stove may be provided with a plurality of the wick-fed burners arranged in a row or in a cluster of any suitable form.

Referring to the construction shown in the drawing, A is a stove having a combustion-chamber formed with the cylindrical casing B. The casing is provided with a base-flange a, hinged at b to a frame C, formed of vertical legs c, braced with upper and lower rings d e, respectively. At the top of the cylinder or chamber B is a cover D, provided with vent-holes for the products of combustion, and pivotally connected with opposite sides of the casing beneath the cover D is a bail E, affording a handle by means of which the entire structure may be carried from place to place. In the sides of the cylinder B are one or more openings f, closed with mica or other transparent material, and in the position shown is an opening g, closed by a sliding or swinging door g'. At the side opposite the hinge b the base a is formed with a catch a', adapted to

engage a spring-latch h on the frame C to lock the parts together when closed, as shown.

F is a font or oil-reservoir provided with the usual threaded burner-engaging collar i.

G is a wick-fed hydrocarbon-oil burner constructed as follows: The base of the burner is a flanged ring k, having an internally-threaded upper end portion presenting a shoulder k', and a lower threaded end adapted to screw into the collar i. An outer wick-tube l is threaded at its lower end to screw into the flanged base k against the shoulder k'. An inner wick-tube m, closed at the base, extends concentrically with the other tube l, forming with the latter an annular passage or chamber n for the wick X. Sliding in the chamber n adjacent to the wall l is a wick raising and lowering sleeve p, actuated from the usual wick raising and lowering pinion p' in a common manner. Rigidly secured to the lower end portion of the tube l is a perforate cup-shaped base q, to which is rigidly secured an imperforate dome-shaped ring q', which extends to the tube l and also houses the pinion p', as shown. The parts l q q' form a lower draft-chamber q', which communicates with the interior of the tube m by means of one or more draft-passages m', which are straddled by the wick X in the usual way. The imperforate dome-shaped ring q' is shaped to form the annular shoulder q'. G' is an outer burner-tube consisting of an expanded base portion r, a cylindrical portion s, and a tapering portion t. The expanded base portion r fits over the dome-shaped ring portion q' and rests tightly but removably against the shoulder q'. The cylindrical portion s is of somewhat greater diameter than the wick-tube l, leaving a narrow annular intervening draft-passage s', fed through a series of perforations s' in the lower end of the cylindrical portion s, beneath the top of the tube l. Adjacent to the tops of the tubes m l is an igniting-opening s' in the cylinder portion s, which opening is closed by a door or shutter s'. The tapering portion t is provided throughout its length with numerous perforations t'. Rigidly secured to the outer side of the burner-



tube G' in the position shown is a ring or hood G' of frusto-conical form, having a perforate base *v* and presenting a narrow annular draft-opening *v'* at its upper end around the perforate tapering portion *t*. On the outer side of the hood G' is an annular socket *v''*, holding a ring or diaphragm H, which at its outer edge fits closely against the inner surface of the base-ring *a* of the casing B.

When the upper part of the stove is swung down upon the hinge *b* to close it, as shown, the diaphragm H closes communication between the combustion-chamber and the under side of the diaphragm except through the burner-passages. Mounted in the tube G' is an inner burner-tube G'' of cylindrical form. It is open at its lower end and there adapted to fit closely into the top of the central draft-tube *m*, and it is closed at the top by an imperforate cap *w*. The cylindrical wall of the tube G'' is provided throughout with numerous perforations *w'*. In the perforate tube G' in the position shown is an imperforate disk or diaphragm *w''*. The inner burner-tube G'' fits tightly through the top of the outer burner-tube G', the tubes being fastened together.

In practice the parts should be so arranged with relation to each other that the disk or diaphragm *w''* is in the horizontal plane of the outer annular draft-opening *v'*. The burner-tubes G' G'' form between them an annular air and gas mixing chamber *y*. To produce the best results, the font F should be filled with an ordinary good grade of kerosene-oil, such as is usually provided for kerosene-burning lamps. The oil rises in the wick X by capillary attraction in the usual way. To start the stove, the shutter *s'* is opened and a lighted match is passed through the opening *s'* to ignite the top of the wick, the wick being lowered to the position shown for this purpose. Air to supply combustion of the oil at the top of the wick enters through the openings *s''* and passage *s'* at the outer side and through the openings in the base *q*, the passage or passages *m'* and central-draft passage *m''*, formed by the tube *m*, the air passing to the wick and mixing-chamber through the openings *w'* at the lower end of the tube G''. The products of combustion from the oil, burning at the top of the wick, quickly raises the temperature of the inner burner-tube G'' and outer burner-tube G', the heat being conducted by these tubes downward to the upper end portions of the inner and outer wick-tubes *m* *l*. When the parts named have become heated to a sufficiently high temperature, which in practice takes less than a minute's time, the wick may be lowered to extinguish the flame or the flame may be otherwise quenched. The wick is then raised until its top is more or less nearly adjacent to a plane corresponding with the plane of the part *e*. The heat stored in the inner and outer

burner-tubes gasifies the oil rising into the upper part of the wick, and the air entering through the draft-openings *s''* and lower openings *w'* mixes with the gas in the mixing-chamber. This mixture rising and escaping through the burner-openings *t'* is then ignited by means of a match inserted through the opening *q*, the latter being closed again by the door or shutter *q'*.

Air to mix with the gas and generate the proper burning mixture in the mixing chamber *y* enters, as before stated, from the outer draft-openings *s''* and inner draft-tube *m''* and escapes for the most part through the burner-openings *t'*. Additional air to supply combustion enters through the perforate part *e*, passing through the adjacent perforations *t'* into the mixing-chamber and a part passing upward through the annular draft-opening *v'* to direct the flame upward. By reason of the fact that the mixing-chamber *y* tapers to the top a large portion of the burning mixture passes through the perforations of the inner tube G'' into the latter and escapes through the upper openings *w'* near the cap *w*, being there ignited.

From the foregoing description it will be understood that after the flame at the wick has preliminarily heated the burner-tubes and has then been extinguished, as described, all combustion of the burning mixture takes place at the burner-openings, which burner-openings are the perforations *t'* above the draft-opening *v'* and the perforations *w'* above the upper end of the outer draft-tube G'. As the wick need burn but the fraction of a minute when the stove is first started, a wick once provided may last indefinitely. The construction shown and described is adapted to insure the perfect intermixture of air and gas in desired quantities, the supply of gas of course being regulated by the height to which the wick is raised above the tops of the wick-tubes *l* *m*. Thus an annular flame of a width equaling the distance from the draft-opening *v'* to the cap *w* may be produced, the flame being blue in color, indicating substantial perfect combustion. The draft from the opening *v'* directs the flame upward, preventing its playing directly against the cylindrical wall B, and the products of combustion escape through the outlets in the top D. The stove constructed as described has comparatively great heating capacity.

As before stated, the stove structure may be adapted to hold a plurality of burners, which may be provided with wicks fed from individual fonts F, or all the wicks may be fed from a single font.

By swinging the upper part of the stove backward upon the hinge *b* access may be had to the burner-tubes when desired, and the burner-tube G', with the parts G'', H, and G''', may be lifted off of the lower part of the



burner (the separation taking place at the shoulder *g'*) whenever it is desired to have access to the wick-tubes, &c.

In the construction shown the font *F* rests in a socket formed by a socket-ring *e'*. Whenever it is desired to fill the font with oil, it and all the parts carried thereby may be lifted out of the frame, when the stove is opened upon the hinge *b*, as described.

It has been found in practice that heat of much greater intensity and volume may be obtained from a burner such as I provide than it is possible to obtain from a burner in which the oil is fed by and ignited at a wick. By employing a wick I obtain the advantages of a regular and readily-controllable supply of the oil and render the stove as free from any danger of explosion as any well-constructed kerosene-lamp. When the burner is in operation, the heat-generating portion thereof is altogether at the burner-openings above the draft-opening *e'*, which is far enough above the wick to prevent the heat from charring it, but not so far as to prevent heat from being conducted downward by the burner-tubes to gasify the oil at the wick as fast as desired. As oil is burned at the wick only for a fraction of a minute when the stove is started, the wick is not materially affected thereby, and as there is practically no material charring of the wick at any time it will not become clogged or require trimming except at very long intervals at the worst.

Modifications of details of construction within the spirit of my invention may be made. Hence no undue limitation should be placed upon the invention by reason of the foregoing detailed description.

What I claim as new, and desire to secure by Letters Patent, is—

1. In an oil-burning heater, the combination with a wick and wick-tube, of inner and outer perforated heat-conducting burner-tubes closed at their upper ends and forming between them an air and gas mixing chamber into the lower end of which the wick projects above the wick-tube.

2. In an oil-stove, the combination of a wick-tube presenting a central draft-passage, a wick in the wick-tube, inner and outer perforated heat-conducting burner-tubes closed at their upper ends and extending above the wick-tube, forming an air and gas mixing chamber into the lower end of which the wick extends, and a stove-casing inclosing the heat-generating part of the burner, substantially as set forth.

3. In an oil-burner, the combination with a wick and with a wick-tube presenting a central draft-passage, of a perforated outer heat-conducting burner-tube around the wick-tube, a perforated inner heat-conducting burner-tube extending from said central draft-passage beyond the upper end of said outer

burner-tube, the inner and outer perforated burner-tubes closed at their upper ends and forming between them an air and gas mixing chamber into the lower end of which the wick extends.

4. In an oil-burner, the combination with a wick, and with a wick-tube presenting a central draft-passage, of a perforated outer heat-conducting burner-tube around the wick-tube, a perforated inner heat-conducting burner-tube extending from said central draft-passage beyond the upper end of said outer burner-tube, the inner and outer burner-tubes closed at their upper ends and forming between them an air and gas mixing chamber into the lower end of which the wick extends, and a diaphragm in the inner burner-tube between the lower and upper ends of the mixing-chamber.

5. In an oil-burner, the combination with a wick, and with a wick-tube presenting a central draft-passage, of a perforated outer heat-conducting burner-tube forming a draft-passage around the wick-tube, and a hood about the outer burner-tube forming an outer draft-passage, the perforated inner heat-conducting burner-tube extending from said central draft-passage beyond the upper end of said outer burner-tube, and the inner and outer perforated burner-tubes closed at their upper ends and forming between them an air and gas mixing chamber into the lower end of which the wick extends.

6. In an oil-burner, the combination with a wick, and with a wick-tube presenting a central draft-passage, of a perforated outer heat-conducting burner-tube around the wick-tube, a perforated inner heat-conducting burner-tube closed at the top and extending from said central draft-passage beyond the upper end of said outer burner-tube, the inner and outer perforated burner-tubes closed at their upper ends and forming between them an air and gas mixing chamber, a hood about the outer burner-tube forming an outer contracted draft-passage between the upper and lower ends of said mixing-chamber and a diaphragm in the inner burner-tube in approximately the plane of the top of said hood, substantially as set forth.

7. In an oil-burner, the combination with a wick, and with a wick-tube presenting a central draft-passage, of a perforated outer heat-conducting burner-tube around the wick-tube, a perforated inner heat-conducting burner-tube extending from said central draft-passage beyond the upper end of said outer burner-tube, the inner and outer perforated burner-tubes forming between them a gradually-contracted air and gas mixing chamber, a hood about the outer burner-tube forming an outer contracted draft-passage between the upper and lower ends of said mixing-chamber, and a diaphragm in the inner burner-tube in ap-

proximately the plane of the top of said hood, substantially as set forth.

8. In an oil-burner, the combination with a wick and wick-tube, of inner and outer perforated heat-conducting burner-tubes closed at their upper ends and forming between them an air and gas mixing chamber into which the wick projects above the wick-tube, the wall of the mixing-chamber at one side having an igniting-opening, and a door for said igniting-opening, substantially as described.

9. In an oil-stove, the combination of a frame, an oil-font in the base of the frame, a burner upon the said font having a wick-tube presenting a central draft-passage, inner

and outer perforated heat-conducting burner-tubes closed at their upper ends and forming between them an air and gas mixing chamber into which the wick projects above the wick-tube, a stove-casing upon the frame surrounding the heat-generating part of the burner, and a diaphragm at the lower end of said casing presenting a narrow draft-opening around said outer burner-tube between the upper and lower ends of said mixing-chamber; substantially as set forth.

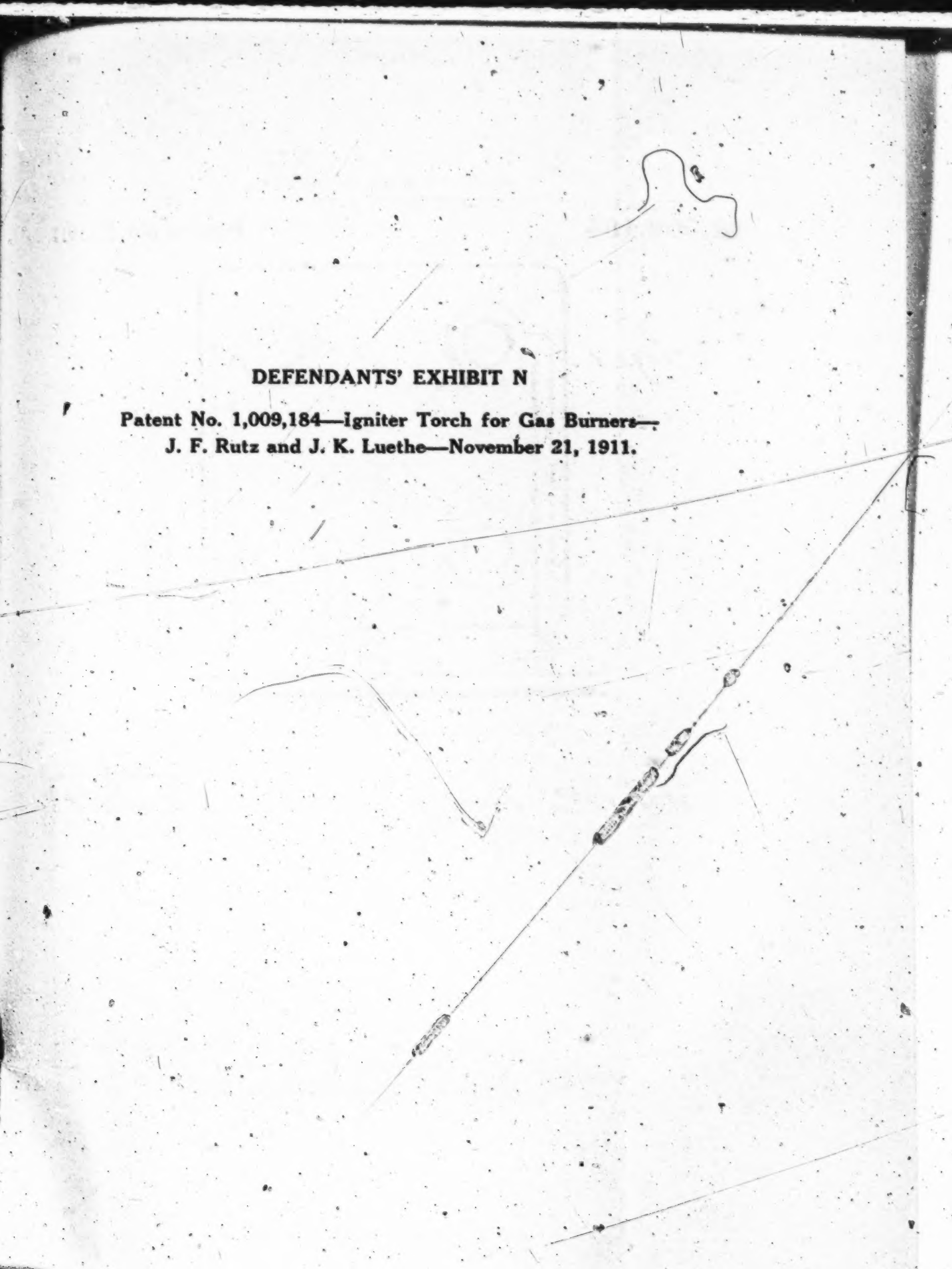
ELLSWORTH E. FLORA.

In presence of—

ALBERT D. BACCI,  
J. W. DYRENFORTH.

**DEFENDANTS' EXHIBIT N**

**Patent No. 1,009,184—Igniter Torch for Gas Burners—  
J. F. Rutz and J. K. Luethe—November 21, 1911.**





J. F. RUTZ & J. K. LUETHE.  
IGNITER TORCH FOR GAS BURNERS.  
APPLICATION FILED MAY 29, 1911.

1,009,184.

Patented Nov. 21, 1911.

Fig. 1.

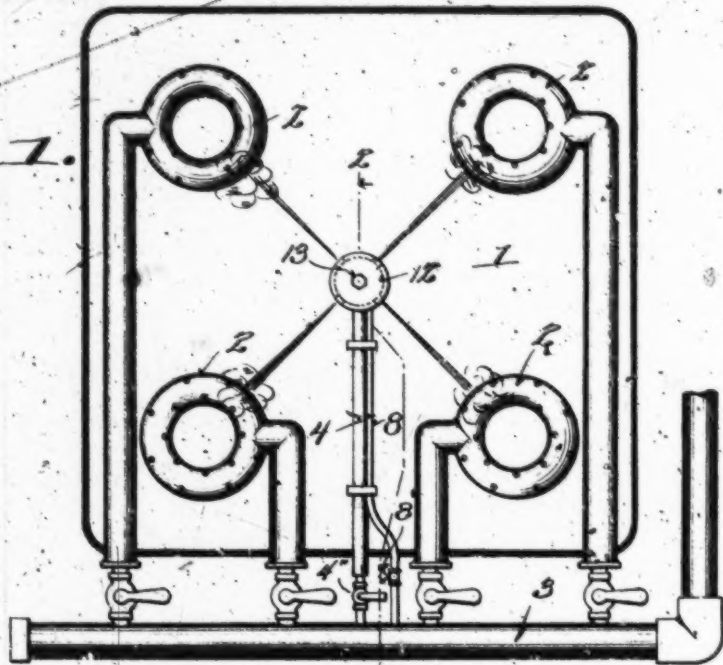
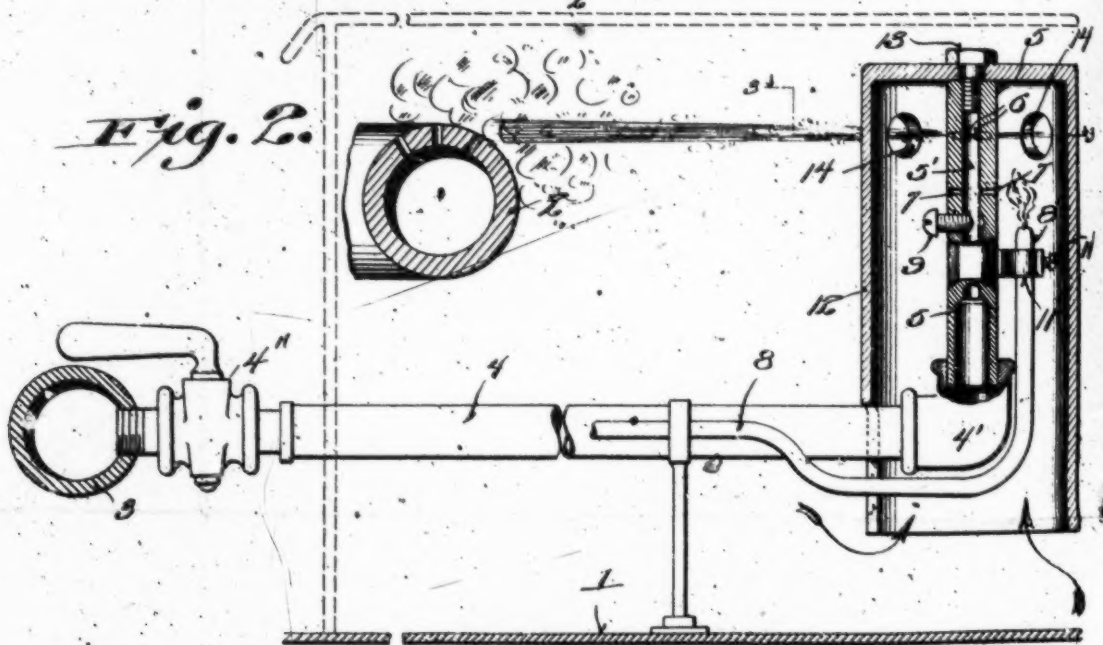


Fig. 2.



Witnessed  
Carroll H. Hargis  
May 29, 1911.

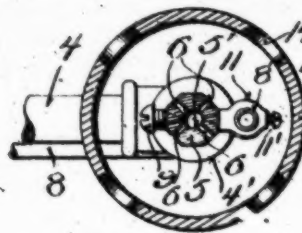


Fig. 3.

Inventors:  
Julius F. Rutz  
Julius K. Luethe  
By Clifford H. Hargis  
Attorneys

# UNITED STATES PATENT OFFICE.

JULIUS F. RUTZ AND JULIUS K. LUETHE, OF MILWAUKEE, WISCONSIN.

## IGNITER-TORCH FOR GAS-BURNERS.

Specification of Letters Patent.

Patented Nov. 21, 1911.

Application filed May 29, 1911. Serial No. 630,113.

1,009,184.

**REISSUED**

*To all whom it may concern:*

Be it known that we, JULIUS F. RUTZ and JULIUS K. LUETHE, both citizens of the United States, and residents of Milwaukee, in the county of Milwaukee and State of Wisconsin, post-office address 812 Brennan street, have invented certain new and useful Improvements in Igniter-Torches for Gas-Burners; and we do hereby declare that the following is a full, clear, and exact description thereof.

The primary object of our invention is to provide a simple, economical and effective igniter torch for gas burners.

Specific objects are to provide a single torch about which a series of valve-controlled burners are grouped within the zone and upon a plane common to individual jet flames that are discharged simultaneously from the torch; to provide a torch head incased within an apertured bell, the apertures being alined with corresponding restricted gas-supply apertures in the torch head; to provide a constant pilot light within the bell whereby the various torch head gas-discharge apertures are simultaneously ignited, the bell forming an air shield for the pilot light whereby cross-currents of air due to exterior disturbances will not snuff out said pilot light, and to provide means whereby the air for the supply of oxygen to the torch flames and pilot light is received from a lower strata than that which supplies the burners, it being well known that ignited burners will consume practically all of the oxygen in the air thereabout and thus reduce the efficiency of a centrally located constant flame.

With the above objects in view our invention consists in what is herein shown, described and claimed.

In the drawings Figure 1 represents a plan view of a gas stove provided with a torch embodying the features of our invention; Fig. 2 an enlarged partially sectional elevation of the torch and its connection, the torch being shown located within a stove which is indicated in dotted lines and having the bottom compartment in full lines and in sections, there being a cross section of a portion of a burner located upon its proper plane relative to the igniter torch. The section of the igniter torch being indicated by line 2-2 of Fig. 1. Fig. 3, a detail

sectional plan view of the torch, the section being indicated by line 3-3 of Fig. 2.

Referring by characters to the drawings, 1 represents the bottom of the burner compartment of a stove, the front wall and skeleton top grid of which stove is illustrated in dotted lines. The stove is provided with a series of burners 2 under suitable valve-control and supplied with gas from a main pipe 3 in the ordinary manner. The branch pipe 4 having a valve 4' is connected to the main pipe 3, said branch pipe being extended into the burner compartment, where it terminates approximately at the center of the same and about which point the burners 2 are conveniently grouped. Coupled to the branch-pipe 4 by an elbow 4' is a vertically disposed torch-head 5, which torch-head is provided with a longitudinal channel 5' and terminates upon a plane slightly below the top grid. The torch-head is also provided with a radially disposed gas-discharge aperture 6 for each burner, the apertures being disposed upon approximately the same horizontal plane as the burners whereby the latter are each within the zone of an individual jet flame that is emitted from the gas-discharge apertures of said torch-head when a supply of gas is admitted thereto.

The torch-head has one or more leak apertures 7 below the gas discharge aperture 6, the leak apertures being staggered in their horizontal plane relative to the plane of the gas-discharge apertures whereby the latter are readily ignited, it being understood that gas from the leak-apertures is ignited by a constant burning torch-nozzle 8, the mouth of which is in juxtaposition thereto but upon a lower plane.

The supply of gas to the various torch-head apertures is regulated by a valve-plug 9 that is in threaded union with an opening which intersects the torch-head channel 5', the plug being below the discharge and leak apertures respectively and is adjusted to effect the desired control of gas thereto. The torch-nozzle 8 is formed from a small tube or pipe that communicates with the main supply-pipe 3 and adjacent to its junction therewith, is equipped with a cut-off valve 8', which, under ordinary conditions, is open, whereby gas is supplied in small quantities to the constant pilot flame. The end of the torch-nozzle is made fast to the



torch-head by its engagement with an apertured clip 11 and should it be desired to adjust the mouth of said nozzle relative to the leak apertures said adjustment can be effected by springing the pipe 8 up or down so as to change the position of the mouth of the same relative to the leak-aperture and thereafter the said pipe is secured within the clip by a set-screw 11' that is in threaded engagement with the clip.

The torch-head 5 and pilot-light nozzle 8' are incased in a bell 12, the top of which is secured to the upper end of said torch-head by a cap-screw 13 that is in threaded engagement with the torch-head channel 5' whereby the same is closed. The bell 12 is provided with a series of vent-holes 14, there being one for each gas-discharge aperture. These vent-holes are of considerably larger area than the discharge apertures and are in radial alignment therewith whereby flames emitted from said apertures are directed upon the various burners to cause ignition of the latter when their valve-controlled gas pipes are opened.

It is apparent from the foregoing description that in the operation of the torch the valve 8' of the pilot-light is normally open, whereby a small flame is constantly maintained within the bell and, owing to its inclosed position, liability of the same to be inadvertently blown out is practically eliminated. When it is desired to ignite one or all of the burners grouped about the torch the supply of gas thereto is admitted by operating their individual cocks and thereafter the valve 4' which controls the gas-supply pipe 4 leading to the torch-head is opened. Gas will then pass out through the discharge aperture 6 and also the leak aperture 7, being slightly pocketed or confined within the top of the bell and simultaneously the torch nozzle 8' will ignite this supply of confined gas, causing a slight explosion which, in turn, will ignite the gas from the discharge apertures 6 and the flame from each of said apertures will be flashed through the vent-holes of the bell and directed upon the various burners whereby they, in turn, will be ignited. It is apparent that should only one of the burners be open to the supply of gas no effect upon the remaining burners will be had. Attention is also called to the fact that the air for the supply of oxygen to the torch is drawn in through the space between the mouth of the bell and the bottom 1, the intake of air being thus upon a considerably lower plane than the burners. the supply of sufficient oxygen for the torch is insured and furthermore the bottom of the bell being in juxtaposition to the bottom plate 1 said bell will effectually shield the pilot-light from the disturbing influence of cross-currents of air. It will be observed

that the horizontally alined vent-holes of the bell and discharge apertures 6 are so arranged for the purpose of discharging the torch flame at the most convenient point for igniting the burner.

We claim:

1. In a gas stove provided with a group of burners; the combination of an igniter torch located approximately centrally of the group, the torch comprising a vertically disposed head having a plurality of radially disposed apertures, each aperture being alined with a burner, a vertically disposed bell having a closed top incasing the head, the bell being provided with radially disposed vent holes, each being in register with a head aperture, a pilot nozzle extending into the bell in juxtaposition to the head apertures, and a gas supply means in communication with the head.

2. An igniter torch comprising a vertically disposed head having a plurality of radially disposed apertures, a vertically disposed closed bell having a closed top incasing the head, the bell being provided with a series of radially disposed vent holes, each being in register with a head aperture, a pilot nozzle extending into the bell in juxtaposition to the head apertures, and a gas supply means in communication with said head.

3. In a gas stove provided with a group of burners, the combination of an igniter torch located approximately centrally of the group, comprising a valve-controlled gas supply pipe, a head in communication therewith about which the burners are grouped, the head being provided with an individual gas-discharge aperture alined with each burner and leak apertures below the gas-discharge apertures, a vertically disposed bell incasing the head provided with vent-holes each being in register with a gas-discharge aperture of the head, the mouth of the bell being upon a lower plane than that of the burners to form an air intake, means for securing the top of the bell to the head, means carried by the head for adjusting the flow of gas to its discharge apertures, and a pilot nozzle extending into the bell in juxtaposition to the leak apertures of the head and below the same.

4. In a gas-stove provided with a group of burners; the combination of an igniter torch located approximately centrally of the group, the torch comprising a vertically disposed head having a channel provided with gas discharge apertures adjacent to its upper end, each aperture being alined with a burner, a vertically disposed bell fitted over the head provided with vent-holes in register with the head apertures, the mouth of the bell being upon a lower horizontal plane than that of the burners to form an air intake shield whereby oxygen is supplied



to the torch and burner flames from different stratas of air, a cap-screw in threaded engagement with the head channel, a valve-plug carried by the head for controlling its channel, and a pilot-nozzle extending into the bell its mouth being in juxtaposition to the gas-discharge apertures of said head.

In testimony that we claim the foregoing we have hereunto set our hands at Milwau-

kee in the county of Milwaukee and State 10  
of Wisconsin in the presence of two witnesses.

JULIUS F. RUTZ.  
JULIUS K. LUETHE.

Witnesses:

GEO. W. YOUNG,  
MAY DOWNEY.

**DEFENDANTS' EXHIBIT N**

**Patent No. 1,175,527—Hood for Flash Igniters—E. C.  
Kahn—March 14, 1916.**

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E. C. KAHN.  
HOOD FOR FLASH IGNITERS.  
APPLICATION FILED MAR. 3, 1915.

1,175,527.

Patented Mar. 14, 1916.

Fig. 1.

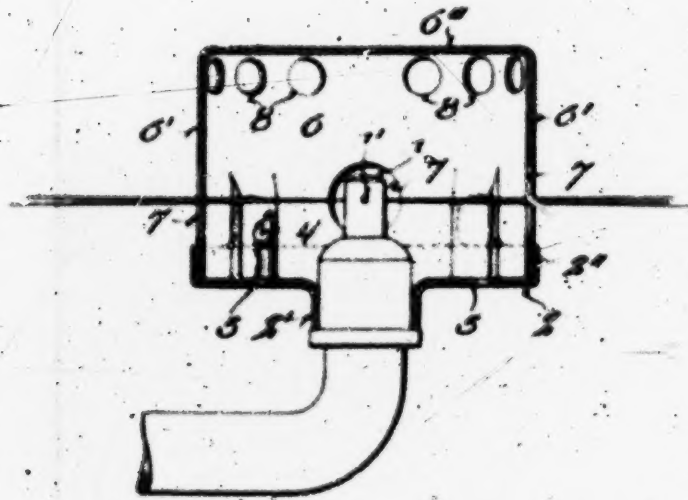


Fig. 2.



Fig. 3.



Witnesses:  
Camille Young  
May 20, 1915

Inventor:  
Edward C. Kahn  
By *Robert H. Young*  
Attorney.



## UNITED STATES PATENT OFFICE.

EDWARD C. KAHN, OF MILWAUKEE, WISCONSIN.

## HOOD FOR FLASH-IGNITERS.

1,175,527.

Specification of Letters Patent.

Patented Mar. 14, 1916.

Application filed March 3, 1915. Serial No. 11,919.

*To all whom it may concern:*

Be it known that I, EDWARD C. KAHN, a citizen of the United States, and resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Hoods for Flash-Igniters; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention refers to the general type of hooded flash torch utilized for igniting grouped gas stove burners and has for its object to provide a simple, economical and effective hood for such flash torches.

Heretofore, so far as I am aware, the general practice has been to utilize either an open top hood for incasing the gas supply head or a closed dome hood. Practice has demonstrated that where an open top hood has been employed, cross-currents of air frequently snuff out the constantly burning pilot-light and hence the closed dome type of hood is the preferable construction. Objections have been found, however, to a dome wholly closed in the top portion for the reason that the constantly ascending current, composed of the products of combustion, is deflected downwardly by the hood into the path of the incoming fresh air, which feeds the flame, and therefore vitiates it in a manner to interfere seriously with proper combustion and at times to snuff out the pilot light altogether by exclusion of oxygen from the flame. This condition also causes the burning pilot-light to emit obnoxious odors and the partly smothered flame also causes sooty deposits, both upon the burner head and walls of the hood.

My invention is designed to overcome the above referred to objections in a closed hood and it consists essentially in the arrangement of a series of vents disposed above the usual firing ports of such hoods.

Another feature of my invention is to provide a bottom spider for the hood, whereby the same may be conveniently removed for cleansing and the separable construction also renders the device simple in manufacture and convenient in assemblage.

With the above objects in view the invention consists in certain peculiarities of construction and arrangement of parts as set forth hereinafter with reference to the accompanying drawings and subsequently claimed.

In the drawings Figure 1 represents a

sectional elevation of a gas-supply head incased within a hood embodying the features of my invention, and Figs. 2 and 3, perspective views of the dismantled hood members.

Referring by characters to the drawings, 1 represents a gas-supply head provided with a series of radially disposed apertures 1' for the discharge of a corresponding series of jet flames to associated gas stove burners, not shown. The head is supplied with gas under valve control, whereby restricted quantities of the gas are caused to flow from the apertures to form a constant burning pilot-light and when the flow of gas is increased the auxiliary volume will cause a series of jet flames to be emitted from the head, as indicated in Fig. 1 of the drawings. All of the above described mechanism, however, forms no part of my present invention.

The hood elements, which are designed to incase any type of head, comprise a spider 2 in the form of a circular disk having a central aperture therein provided with a downturned flange 2' for engagement with the head. The rim of the spider is provided with an upturned flange 2'', from the edges of which a series of inwardly offset and upwardly projecting tongues 4 extend. The body of the disk is provided with a series of air inlet apertures 5, whereby oxygen is supplied to the head for proper combustion. Removably seated upon the spider is an inverted cup-like hood 6, the side walls 6' of which are provided with a series of depressions 6'' extending for a predetermined distance from its mouth adapted to have sliding engagement with the tongues of the spider. The side walls of the hood are also provided with a series of firing ports 7, which are so positioned with relation to the tongue-receiving depressions as to register with the firing apertures of the head.

The side walls of the hood are also provided with a series of vent apertures 8 positioned just below the dome wall 6''' of the hood, as shown, which vent apertures are so proportioned with relation to the air inlet apertures 5 of the spider as to produce perfect combustion with relation to the constantly burning pilot-light.

From the foregoing description it is apparent that, owing to the hood vents above the firing apertures, there is no liability for the accumulation of a strata of vitiated air or products of combustion above the burner

head to flatten or snuff out the pilot-light. This result is due to the fact that the proper amount of oxygen is admitted from below for combustion and the spent products are carried off through the vent openings 8. Furthermore, it will be seen, owing to the fact that the air intake apertures 5 and vent apertures 8 are uniformly disposed about the pilot-light, the currents of air entering and discharging from the closed hood will flow uniformly about the head, whereby cross-currents are eliminated, which cross-currents would otherwise snuff out or cause the pilot-light to waver and, as previously mentioned, this construction also eliminates the tendency of the low-burning pilot-light to foul the ports in any way, resulting in obnoxious odors.

I claim:

1. A substantially closed dome hood for flash igniters comprising an inverted one-piece cup-like member having a series of firing ports therein, and a series of vent apertures above the firing ports.

2. A substantially closed dome hood for flash igniters comprising an inverted one-piece cup-like member having a series of firing ports therein, a series of vent apertures formed in the wall of the dome above the firing ports, and a spider for supporting the inverted mouth of the cup-like hood.

3. A hood for flash igniters comprising an inverted one-piece cup-like member, the side walls of which are provided with firing ports adjacent to its inverted mouth and vent ports adjacent to its top wall.

4. In a flash torch comprising a burner head having a series of firing apertures therein; the combination of a one-piece closed dome hood for incasing the head, the hood being provided with firing ports in register with said head, and vent apertures above the firing ports.

5. In a flash torch comprising a burner head having a series of firing apertures therein; the combination of a one-piece closed top dome hood for incasing the head, the same being provided with firing ports in register with the head apertures and a series of vent apertures above the firing ports, and a spider for supporting the hood having air inlet apertures therein.

6. A one-piece closed top dome hood for flash igniters comprising an inverted cup-like member provided with a series of firing ports and vent ports above the firing ports, and a spider for detachable connection with the inverted mouth of the cup-like hood.

7. In a flash torch comprising a burner head having a series of firing apertures therein; the combination of a one-piece hood incasing the head and closed at the top, said hood having a series of vent apertures in its side walls adjacent to the top and also having firing ports located below said apertures in registry with the apertures in the head.

8. In a flash torch comprising a burner head having a series of firing apertures therein; the combination of a one-piece hood incasing the head and closed at the top, said hood having a series of vent apertures in its side walls adjacent to the top and also having firing ports located below said apertures in registry with the apertures in the head, and means for supplying air to the hood from the bottom.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee in the county of Milwaukee and State of Wisconsin in the presence of two witnesses.

EDWARD C. KAHN

Witnesses:

GEO. W. YOUNG,  
M. E. DOWNEY.

**DEFENDANTS' EXHIBIT N**

**Patent No. 22,771—Lamp—H. Knowles—January 25,  
1859.**

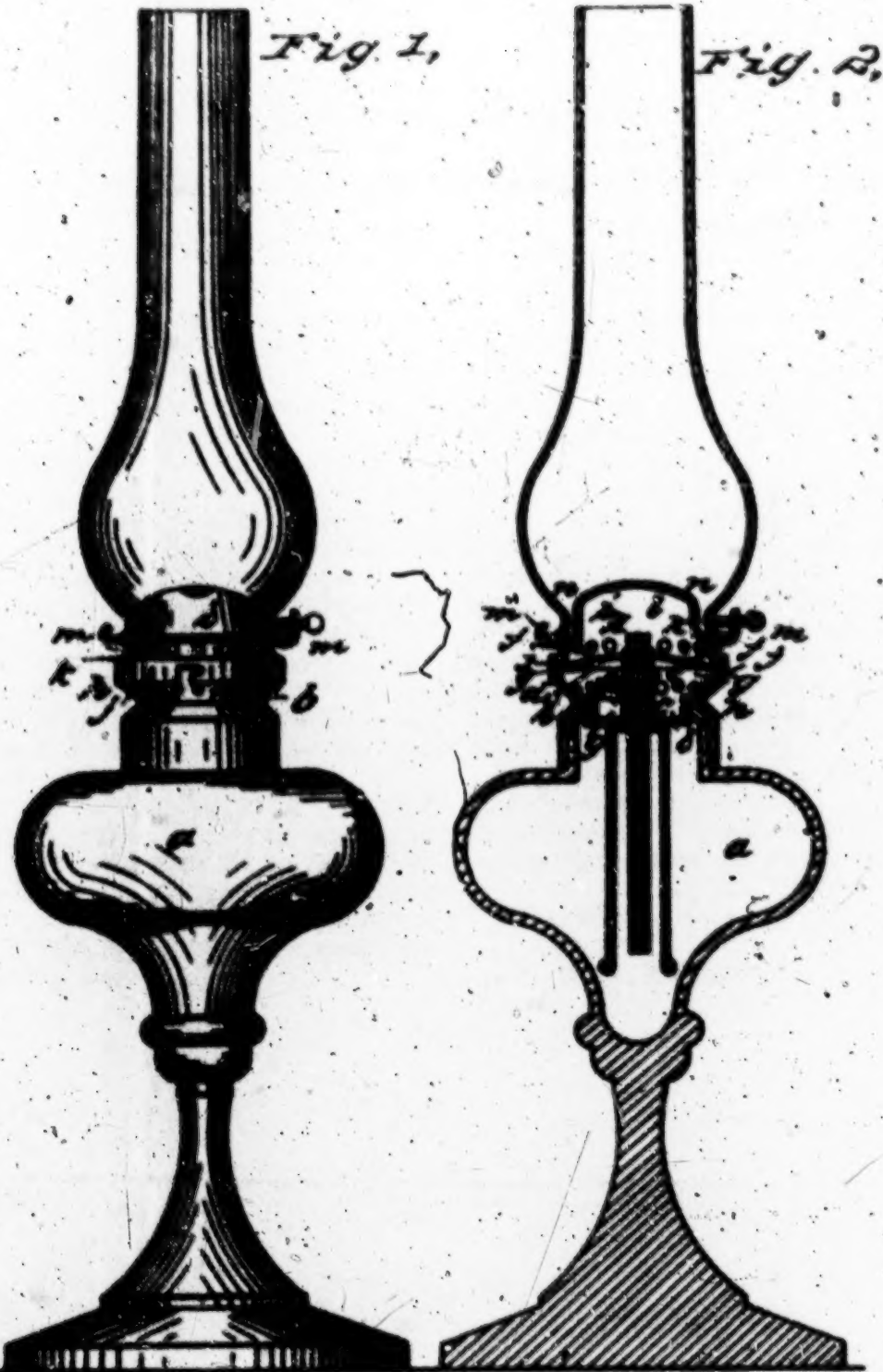


H. KNOWLES.

Lamp

No. 22,771.

Patented Jan. 25, 1859.



Witnesses  
W. H. Knowles  
Charles L. Day

Inventor,  
H. Knowles

## UNITED STATES PATENT OFFICE.

H. KNOWLES, OF NEW LONDON, CONNECTICUT, ASSIGNOR TO FELLOWS, HOFFMAN & CO.,  
OF NEW YORK, N. Y.

## LAMP.

Specification of Letters Patent No. 22,771, dated January 25, 1859.

To all whom it may concern:

Be it known that I, HEEZKIAH KNOWLES, of the city of New London and State of Connecticut, have invented a certain new and useful Improvement in Lamps for Burning Tallow, and other Concrete Fats, but Which is Applicable to Burning other Substances; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1, is an elevation of a pedestal lamp with my improvement applied, and Fig. 2, a vertical section thereof.

The same letters indicate like parts in both figures.

Serious difficulties have been experienced in producing a clear and steady flame in lamps for burning concrete fats, and specially tallow, and also in supplying the material to the wick in a sufficiently fluid state to prevent the wick from carbonizing to such an extent as in a short time to seriously check the capillary attraction by which the material is supplied in the liquid state to the upper part of the wick.

The object of my invention is to remedy the difficulties heretofore experienced, and to this end, my said invention consists in combining with the deflector which has heretofore been employed in lamps for directing a current of air across the flame above the wick, and with a surrounding chimney provided with suitable apertures for the admission of a current of air inside the chimney and outside of the said deflector, a second deflector which surrounds the wick tube at or near the upper edge thereof, leaving a narrow space between the edge of the said deflector and the wick tube for the passage upward of a current of air all around the wick, the said deflector being extended outward to the neck or ferrule at the neck of the lamp to form a chamber with apertures all around for the admission of air which becomes highly heated before escaping upward around the wick tube.

In the accompanying drawings (a) represents the glass reservoir of a pedestal lamp, made of the required capacity, for containing a sufficient supply of tallow, or other concrete fat, or other suitable material to be burned with a wick. The upper part of the said reservoir is formed with a neck to

which is properly secured a metallic ferrule (b) which carries a flat metallic wick tube (c) extending down into the tallow or other material and suitably formed for conducting the heat to melt the tallow, &c., if applied to burning concrete fats, and provided also with suitable means, as at (d) for elevating or depressing the wick. This wick tube is connected with the ferrule by arms or a plate (e). And above the arms or plate there is what may be termed a diaphragm deflector (f) fitted to the inside of the ferrule near the upper edge thereof, and which extends inward to within a very short distance of the wick tube and nearly on a level with the upper edge thereof. It should not extend above the wick tube but may be slightly below, the position represented in the drawings I have found in practice to be the best. I have contemplated fitting the said diaphragm deflector to the ferrule so as to slide therein with suitable means for adjusting its height relatively to the upper edge of the wick tube, as other deflectors have heretofore been made adjustable. The chamber (g) thus formed within the ferrule by this deflector confines the heat; and air is admitted to this chamber through a range of holes (h) in the periphery of the ferrule. The air thus admitted is heated and rarefied by the heat within the chamber, and rising in consequence escapes upward with great velocity in a thin film around the wick tube to feed the flame at the upper edge of the wick tube, the position of the deflector, relatively to the upper edge of the wick tube, inclining the current all around inward toward the wick; hence the importance of an accurate adjustment of the position of the deflector.

Above the wick tube is placed the usual deflector (i) for supplying air to the flame above the wick. It is formed in the shape of a hemisphere with an elongated aperture at top of the form of a horizontal section of the wick tube, but a little larger. The base spreads out, and is provided with a cylindrical ring, as at (j) to fit over the upper part of the ferrule, with what is termed a bayonet joint, so that it can be readily taken off and put on, and secured in place. A series of holes (k) are made all around through the base for the admission of air to feed the flame above the wick. In this way a second chamber (l) is formed be-

tween the two deflectors and surrounding the lower part of the flame so that the heat given out by this part of the flame heats the lower diaphragm deflector, which, by conduction, heats the chamber (g) below, and in this way not only are the currents of air below the deflectors heated, the better to supply combustion, but more heat is conducted down to the tallow or other material in the reservoir, to keep the tallow, &c., in a fluid state, than can be obtained in lamps of any other construction, except such as have metallic conductors placed in the flame, such conductors being seriously objectionable.

The base of the upper deflector is provided with brackets (m) suitably formed to receive and hold the lower edge of the glass chimney, leaving an open space (n) for the free entrance of a current of air to the inside of the chimney to supply the required draft, and to feed the flame above the upper deflector. Without this latter

supply of air the flame, however intense below the upper deflector, would give but a feeble light and would be liable to smoke.

I do not claim separately either of the deflectors above described, nor the introduction of a current of air at the base of the chimney and between it and the upper deflector. But

What I do claim as my invention and desire to secure by Letters Patent is—

The lower or diaphragm deflector surrounding the wick tube at or near its upper edge, substantially as, and for the purpose, specified, in combination with the upper deflector, and the chimney having suitable openings for the supply of a draft of air to the inside and to feed the flame outside of the upper deflector, substantially as, and for the purpose, specified.

HEZEKIAH KNOWLES

Witnesses:

WM. H. BISHOP,  
ANDREW DE LACY.



**DEFENDANTS' EXHIBIT N**

**Patent No. 32,906—Lamp Burner—J. Thomas—July 23,  
1861.**

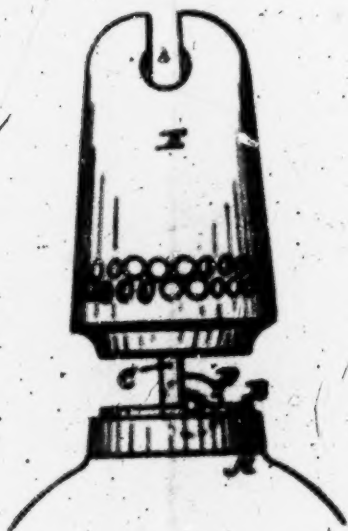
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**J. THOMAS.**  
**Lamp Burner.**

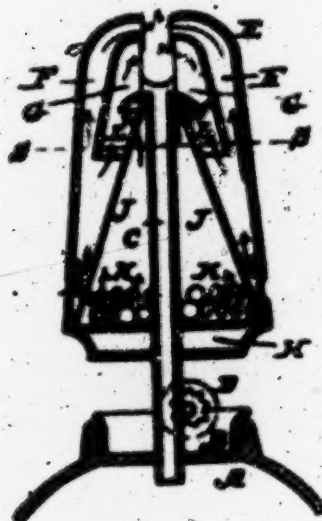
No. 32,906.

Patented July 23, 1861.

*Fig. 1.*



*Fig. 2.*



**Fig. 3**



**witnesses:**

Thomas D. Peterson

C. H. Babcock

**Inventor:**

Joseph Thomas

## UNITED STATES PATENT OFFICE.

JOSEPH THOMAS, OF NEW YORK, N. Y.

## LAMP.

Specification of Letters Patent No. 32,906, dated July 23, 1861.

*To all whom it may concern:*

Be it known that I, JOSEPH THOMAS, of the city, county, and State of New York, have invented a certain new and useful Im-

provement in Lamps; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation, Fig. 2 a vertical section, and Fig. 3 a horizontal section on line S, S, in Fig. 2.

Similar letters of reference indicate like parts in all the figures.

To enable others skilled in the art to make and use my invention I will proceed to describe its construction and operation by the aid of the drawings.

A is the upper portion of the body of a lamp, B is a cap adapted thereto, C a flat-wick tube, D a spurred wheel by turning which the wick may be raised and lowered, and E a hemispherical cap. All these parts are similar to those in a great number of lamps in common use.

F is the outer side and G the inner side of a piece which is mounted in the position represented and which serves to conduct heat downward and to generate and direct an upward current of air to support the flame.

It will be observed that the inner sides G, G, are not continued downward to so low a level as the outer sides F, F, but are sufficient to direct the presentation of the air to the flame and prevent its striking in a vertical or nearly vertical direction. The entire piece F, G, F, G, fulfils the functions performed by the tubes in my patent for improvement in lamps dated April 23, 1861.

H is a shelf fixed upon C.

J is a conical case resting upon H. It is perforated near its base with the holes K, and near its top by the holes L. Its top is fitted closely to the top of the wick-tube C, but it is not a part of the same piece of metal neither is it soldered to the same but

is nearly or quite in contact therewith. In consequence of the slowness of this contact the conduction of heat from one piece to the other is slow. Currents of cold air are freely admitted through the apertures K and escape through L as represented by the arrows.

The piece F, G, is necessarily highly heated and as my lamp has been heretofore constructed the heat thereof has been transmitted to the wick-tube C to such extent as to slightly scorch the wick, but by my present invention this evil is avoided and the wick tube with its contents is kept cool. This is due partly to the simple fact that the interposition of the case J between G and the top of C retards the conduction of heat from G to C as also all radiation between these parts, and partly to the cooling effect of the draft of air admitted through K and escaping through L.

Having now fully described my invention what I claim as new therein and desire to secure by Letters Patent is—

1. Supporting the heating and deflecting piece F G upon the casing J which latter is interposed between the heating and deflecting piece F G and the wick tube C and so arranged as to retard the transmission of heat to the latter substantially as herein set forth.

2. In connection with the above allowing a portion of the air which passes between the heating and deflecting plates F G to first pass between the casing J and the wick tube C substantially as and for the purpose herein set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JOSEPH THOMAS.

Witnesses:

THOMAS D. STETSON,  
G. H. BARCOCK.



**DEFENDANTS' EXHIBIT N**

**Patent No. 35,349—Lamp—C. F. Martine—May 20,  
1862.**

268

C. F. MARTINE.

Lamp.

No. 35,349.

Patented May 20, 1862.

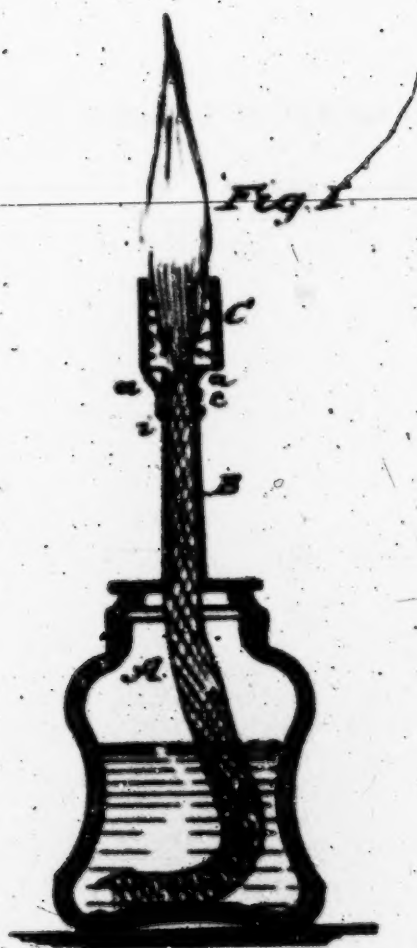


Fig. 2

WITNESSES  
*Patent Attorneys*  
*Amos & Co.*



INVENTOR  
*Chas. Martine*  
by his Attorney  
*Samuel Cooper*

# UNITED STATES PATENT OFFICE.

CHARLES F. MARTINE, OF DORCHESTER, ASSIGNOR TO HIMSELF, AND RUFUS H. EMERSON, OF LYNNFIELD CENTRE, MASSACHUSETTS.

## IMPROVEMENT IN LAMPS.

Specification forming part of Letters Patent No. 25,349, dated May 20, 1862.

*To all whom it may concern:*

Be it known that I, CHARLES F. MARTINE, of Dorchester, in the county of Norfolk and State of Massachusetts, have invented an Improvement in Lamps, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a vertical section through a lamp having my improvement attached thereto. Fig. 2 is a view of the attachment which constitutes my improvement.

The object of my invention is to improve that class of lamps which are used without a chimney, and which from the imperfect combustion of the kerosene or other fluid used are liable to smoke; and my invention consists in attaching to the lamp a tube of sheet metal or other suitable material of somewhat greater diameter than the wick tube or orifice and extending above it, so as to encircle the lower part of the flame, and by the heat which it retains assist in consuming the smoke and gases, which would otherwise escape by imperfect combustion.

That others skilled in the art may understand and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawings, A is the lamp; B, the wick-tube, to the upper end of which is attached a perforated tube of sheet metal, C, (shown detached in Fig. 2.) It has three short legs, *a*, projecting from it, to which are attached a ring, *c*, which embraces the wick-tube. This may be made sufficiently tight to hold the tube C in place, or a ring, *t*, may be secured to the wick-tube, on which the ring *c* will rest. This tube C extends above the top of the wick-tube and surrounds the lower

part of the flame, as shown in Fig. 1. When adjusted at the proper height, the flame burns above the tube C in a clear steady cone of light of much greater size and emitting a much greater amount of light without smoking than the same lamp would do without the attachment of the tube.

The form and dimensions of the tube C may be varied, as well as the material of which it is made, without departing from the spirit of my invention; but the construction here shown is that which I prefer. For example, the tube may be made tapering, or its sides concave or convex, or when applied to a flat wick may be shaped to correspond with it. I have also tried the plain metal without the perforations, but consider that the perforated tube gives the best result, as it admits a larger amount of air to the flame. I deem it essential, however, to produce the best effect, that the tube should be open at both top and bottom. I am aware that a metal cap has been applied to a lamp with a chimney, as in the "kerosene-lamp," so called; but in this case the cap was set upon the top of the lamp and was surrounded by a chimney and could not be applied to such a lamp as is here represented.

What I claim as my invention, and desire to secure by Letters Patent, is—

The tube C, open at both its top and bottom, its lower end being at or near the top of the wick-tube and its upper end projecting above the wick, the whole constructed, arranged, and operating substantially in the manner and for the purpose specified.

CHAS. F. MARTINE.

Witnesses:

THOS. R. ROACH,  
EDMUND MASSON.



**DEFENDANTS' EXHIBIT N**

**Patent No. 318,030—Lamp Burner—E. B. Requa—May  
19, 1885.**

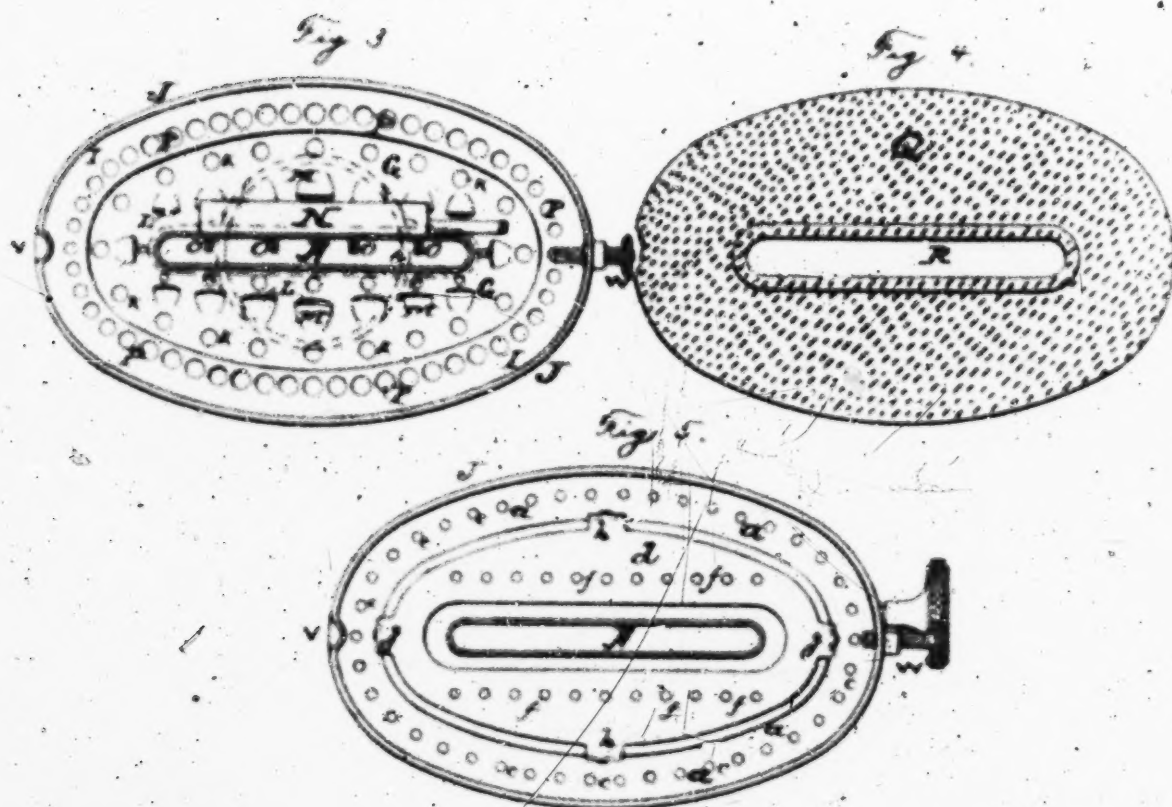
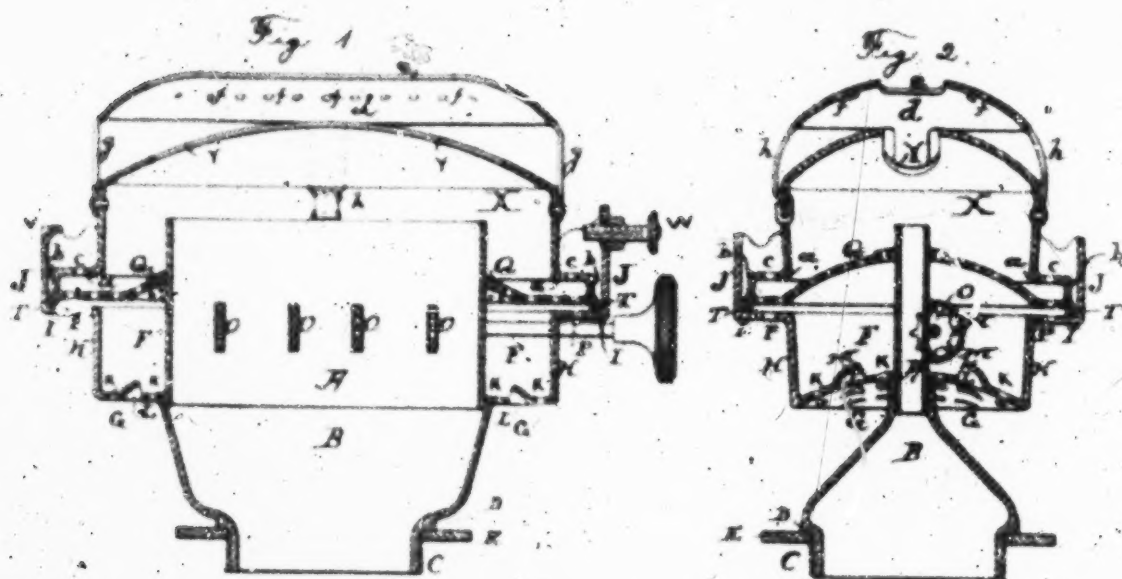
(No Model.)

E. B. REQUA.

LAMP BURNER.

No. 318,030.

Patented May 19, 1885.



**WITNESSES:**

Herman Gustav  
William D. Emerson

INVENTOR,

Elias B. Regua

BY

Cha. C. Hill

ATTORNEY.

## UNITED STATES PATENT OFFICE.

ELIAS B. REQUA, OF JERSEY CITY, NEW JERSEY.

## LAMP-BURNER.

SPECIFICATION forming part of Letters Patent No. 218,030, dated May 19, 1885.

Application filed April 23, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, ELIAS B. REQUA, a citizen of the United States, and a resident of Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Lamp-Burners, of which the following is a specification.

The invention relates to improvements in lamps; and it consists in a burner of novel construction, the operation and arrangement of the parts of which are fully set forth hereinafter, reference being therein made to the accompanying drawings, which form a part of this application, and in which—

Figure 1 is a central vertical longitudinal section of an embodiment of the invention. Fig. 2 is a central vertical transverse section of same. Fig. 3 is a top view of the burner, the flame dome or deflector and foraminous plate being removed for purposes of illustration. Fig. 4 is a view of the foraminous plate, and Fig. 5 is a top view of the complete burner.

Referring to the drawings, A denotes the wick-tube, which is elongated and secured upon the upper edges of the cone B, through which the wick passes on its course through the tube A and by means of the thread C, on the lower edge of which the burner is secured upon the lamp-fount. The cone B is circular in outline at its base, and thence its opposite sides deflect inward and upward toward the sides of the tube A, while the ends of the cone diverge upward and outward toward the ends of the tube A. Thus while the base of the cone is circular, the length of the body thereof is of greater dimension than its width. This construction of the cone B is illustrated in Figs. 1 and 2, and it subserves the very important purpose of permitting the employment of a much larger wick than would be possible were the cone of a different form, without necessitating an enlargement or a detracting from the appearance of the burner.

In order to insure the firm connection of the burner with the oil-fount, I have provided the lower portion of the cone B with an annular bead, D, and an internally-threaded disk or washer, E, either or both of which may be used at pleasure.

The wick-tube A is surrounded by the bowl

F, which in the present instance is oval in horizontal section, and it consists of the base G, the vertical wall H, horizontal portion I, and chimney-retaining flange J. The central portions of the base G closely encompass the wick-tube A, and serve as a means of connecting the bowl with the burner, the other portions of the bowl being suitably removed from the wick-tube to meet the purposes of the invention, as illustrated in Figs. 1 and 2. The base G is curved upward at its center, and is provided with the apertures K and openings L, these latter being covered above with the deflectors M, which incline upward toward the wick-tube A, and operate to direct the air entering through the openings L against the wick-tube, whereby when the burner is in use a constant volume of cool air is directed against the sides and ends of the tube.

Upon one side of the tube A is provided the box N, which incloses the wick-raising wheels O of the usual construction.

The horizontal portion I of the bowl F contains perforations P, and supports between said perforations and the flange J, the foraminous cone-shaped plate Q, the center of which has an elongated opening, R, to permit of the insertion of the plate over the wick-tube.

The outside edges of the plate Q have a depending flange, T, which rests upon the portion I of the bowl F and forms an air-space between the plate and part I. Thus the plate Q does not interfere with the proper operation of the apertures P.

The retaining-flange J will be of suitable height and construction, and is supplied with the lip V and set-screw W, to engage the lower edge of the chimney in the customary manner.

The flame dome or deflector X has the usual flame-slot, Y, and at its base is formed the horizontal chimney-support a and vertical flange b, the former containing a line of apertures, c, leading within the chimney, and the flange b serving to support the dome X and elevate the part a from contact with the foraminous plate Q. A deflector, d, containing a flame-slot, e, and perforations f, is superposed over the dome X, being supported in position by the end lips or lugs, g, and the side lips, h, the lower ends of the lips being secured to the



sides of the dome either by riveting or by passing them through slots formed therein or otherwise, as indicated in Fig. 2. The deflector *d* is curved to correspond with the curvature of the top of the dome *X*, so as to carry the air into the flame when the burner is in use, and its edges are free and uninclosed except by the lips *g h*. The lips *g*, in addition to supporting the deflector *d*, perform the important function of preventing the spread of the flame into the shape of a fan, it being one of the principal objects of the present invention to produce a broad rectangular shaped flame.

It should be noted that the wall *H* of the bowl *F* is in line with the vertical wall of the dome *X*, and that the burner contains no parts which can interfere with the proper circulation of air through the same, either by forming eddies thereof, (which has proved fatal to so many burners,) or otherwise.

Upon considering the construction of the burner its operation will be apparent. The air which passes through the base *G* is in part directed over the sides and ends of the wick-tube, while the other portion ascends over the wall *H*. All of the air thus passing through the base *G* previously circulates over the cone *B*, keeping it cool, and afterward rises through the foraminous plate *Q* to the flame. The outside drafts pass through the apertures *P*, plate *Q*, and apertures *c* to the inside of the chimney, whence they ascend over the outside walls of the dome *X* and under the deflector *d* to the flame, a portion of the air being permitted to rise through the apertures *f*, whereby any possibility of an unduly strong current of the air into the flame or the formation of eddies is avoided. The effect of the air deflected by the opposite sides of the deflector *d* is to hold the flame steadily in position and to mix fresh air at the outlet from the dome with the air which has been heated in the dome, and thus to restore as near as may be the combustible qualities of the partially-exhausted air at a point adjacent to the hydrogen part of the flame. The parts of the burner are so constructed and arranged that the currents of air circulate freely over and about the same, and are thoroughly diffused and properly fed to the flame.

In an application for Letters Patent of even date herewith and having serial number 129,097, I describe the burner which is the subject of this application in connection with a chimney, the chimney being the form at

present thought most desirable for use on the burner described.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a lamp-burner, the wick-tube, in combination with a flame-dome and the encircling bowl *F*, the base of which is provided with openings *I*, and deflectors *M*, substantially as set forth.

2. A lamp-burner consisting of the bowl *F*, encircling the wick-tube, and composed of the perforated base, wall *H*, horizontal portion *I*, and flange *J*, in combination with the foraminous plate *Q* and dome *X*, an air-passage being provided at the base of the latter for permitting the entrance of air into the chimney, substantially as set forth.

3. A lamp-burner consisting of the bowl *F*, inclosing the wick-tube *A* and box *N*, which covers the wick-raising wheels *O*, in combination with the dome *X*, the bowl *F* being provided with apertures for the passage of air, and an air-passage at the base of the dome being also provided to permit the entrance of air into the chimney, and the bowl and dome being substantially in line with each other, as and for the purposes described.

4. In a lamp-burner, the combination of the wick-tube, bowl *F*, having a perforated base and perforations *P*, foraminous plate *Q*, and dome *X*, having perforations *c*, the vertical walls of the bowl and dome being substantially in line with each other, as described.

5. In a lamp-burner, the combination of the wick-tube, the bowl *F*, consisting of perforated base *G*, wall *H*, perforated portion *I*, and flange *J*, the foraminous plate *Q*, having flange *T*, the dome *X*, whose vertical walls are in line with those of the bowl *F*, and having the perforated chimney-support *a* and flange *b*, substantially as specified.

6. A lamp-burner consisting of the bowl *F*, inclosing the wick-tube and composed of the perforated base, walls *H*, horizontal portion *I*, and flange *J*, in combination with the foraminous plate *Q*, having the flange *T*, and the dome *X*, having the flange *b*, the said dome and bowl being in line with each other, as described.

Signed at New York, in the county of New York and State of New York, this 15th day of April, A. D. 1884.

ELIAS B. REQUA

Witnesses:

HERMAN GUSTOW,  
CHAR. C. GILL.

**DEFENDANTS' EXHIBIT N**

**Patent No. 577,090—Safety Lamp—Frederick A. E.  
Wenzel—February 16, 1897.**

273

No. Model 2.

F. A. E. WENZEL.  
SAFETY LAMP.

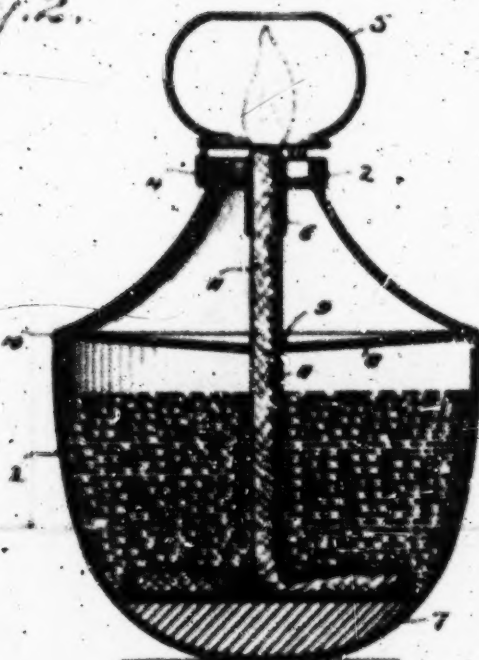
No. 577,090

Patented Feb. 16, 1897.

Fig. 1.



Fig. 2.



WITNESSES

H. A. Lamb

S. T. Richardson.

INVENTOR

Frederick A. E. Wenzel

By

J. M. Wooster  
Att'y.



## UNITED STATES PATENT OFFICE.

FREDERICK A. E. WENZEL, OF DANBURY, CONNECTICUT, ASSIGNOR TO  
ALBERT F. PIERCE AND REBECCA N. PIERCE, OF SAME PLACE.

## SAFETY-LAMP.

SPECIFICATION forming part of Letters Patent No. 577,090, dated February 16, 1897.

Application filed December 26, 1895. Serial No. 573,324. (No model.)

*To all whom it may concern:*

Be it known that I, FREDERICK A. E. WENZEL, a citizen of the United States, residing at Danbury, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Safety-Lamps; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its object to provide a safety-lamp adapted for general use in either a portable or stationary capacity, for example, as a pocket-lamp or a night-lamp, the special features of novelty being that the lamp is self-lighting under all circumstances and that the body or reservoir is provided with a diaphragm which renders passage of the contents of the reservoir to the upper portion thereof practically impossible should the lamp be upset. With these ends in view I have devised the novel construction of which the following description, in connection with the accompanying drawings, is a specification, numbers being used to designate the several parts.

Figure 1 is an elevation, the closing-cap being in section; and Fig. 2 is a vertical section of the entire lamp, a globe-ring and globe being shown in position instead of a closing-cap.

1 denotes the body or reservoir of the lamp, which may be of any suitable shape, as my invention is not limited to any special configuration, but is preferably made of substantially the configuration shown in the drawings—that is to say, the bottom or lower portion of the body is spheroidal in form until a shoulder 10 is reached, from which point the body diminishes in diameter toward the top, the lines of the sides in the present instance being concave curves. The body may be made in one piece or two, as preferred. At the top of the body is the usual threaded ring 2, which is adapted to receive either a closing-cap 3, as in Fig. 1, or a globe-ring 4, as in Fig. 2.

5 indicates a globe or shade, which may or may not be used when the lamp is used as a night-light.

6 denotes a wick-tube, which may be of any

ordinary or preferred construction and may or may not be provided with a wick-raising device. I have shown a short tube adapted to receive a round wick and without a wick-raising device, it being preferred by many in this class of lamps to lift the wick when necessary with any sharp instrument and to do away wholly with a mechanical raising device.

The essential features of my novel lamp are, first, a weight 7, which is placed wholly at the bottom of the reservoir, so as to always hold the body in an upright position, and should the lamp be forcibly overturned to return it instantly to its upright position as soon as the influence which has carried it out of the upright position is removed, and, second, a diaphragm 8, placed entirely across the body of the lamp on its inner side and above the center, but below the top, said diaphragm inclining slightly downward from its edge to the center and being provided at the center with an opening 9, which just permits the wick to pass through. The action of this diaphragm is to retain the contents of the body or reservoir at the bottom thereof should the lamp be overturned. The position and shape of this diaphragm coact with the external shape of the body in insuring the return of the lamp to an upright position, for the reason that the oil is prevented from passing into the upper part of the body. Furthermore, this diaphragm being nearly flat and extending from the sides of the lamp-body below the top serves to prevent oil from passing to a part of the lamp that would tend to keep it on its side when knocked over. This function is not possessed by a tube or diaphragm which is cone-shaped and extends downward from the top of the lamp-body.

It is of course obvious that should the reservoir be more than half full, and should it be held in a horizontal or nearly horizontal position for some little time, a portion of the contents of the reservoir might pass through the diaphragm at the wick-opening. This of course is unavoidable; but by making the diaphragm to incline downward from the edge toward the wick-opening I insure that the instant the lamp is righted again all of the contents of the reservoir that may have passed

through the wick-opening will at once pass back again into the reservoir below the diaphragm.

Owing to the arrangement of the diaphragm, as above described, whereby the oil is confined to the lower part of the reservoir, the weight of the oil cooperates with the lead or other weight at the bottom in insuring the return of the lamp to an upright position. Therefore a less amount of lead or other solid weight is required, and the lamp is in consequence lighter than would be the case in a self-righting lamp if the oil were free to flow into the upper part of the reservoir when the latter is turned on its side.

Having thus described my invention, I claim—

1. A safety-lamp provided with a body having a weight at the bottom and a diaphragm extending from the sides thereof below the top and which inclines slightly downward

from its edge to the center and is provided at the center with an opening through which the wick passes, said wick closely fitting the opening.

2. A safety-lamp having a body the lower portion of which is spheroidal in form and is provided with a weight placed wholly at the bottom and a diaphragm extending from the sides thereof below the top and which inclines slightly downward from its edge to the center and is provided at the center with an opening through which the wick passes, said wick closely fitting the opening, substantially as described, for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

FREDERICK A. E. WENZEL.

Witnesses:

JAMES B. WILDMAN,  
CHARLES W. MURPHY.

**DEFENDANTS' EXHIBIT N**

**Patent No. 1,036,514—Torch—H. H. Nichols—August  
20, 1912.**



H. H. NICHOLS.  
TORCH.

APPLICATION FILED MAY 16, 1912

1,036,514.

Patented Aug. 20, 1912.

Fig. 2

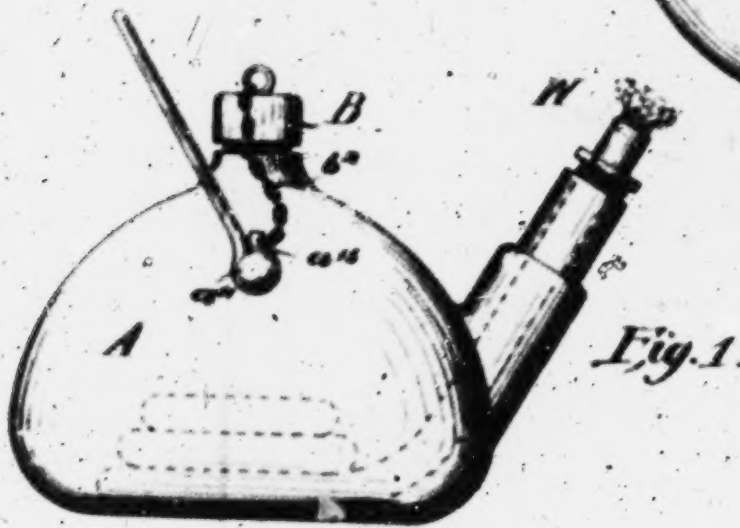
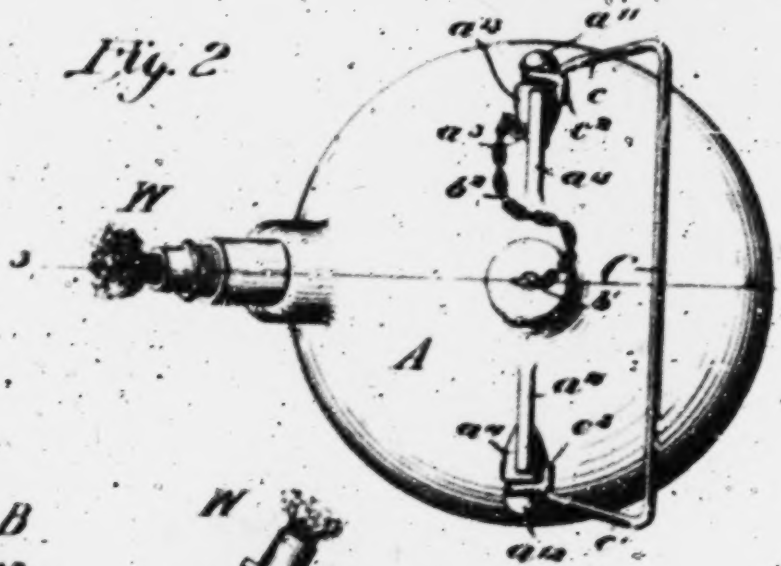
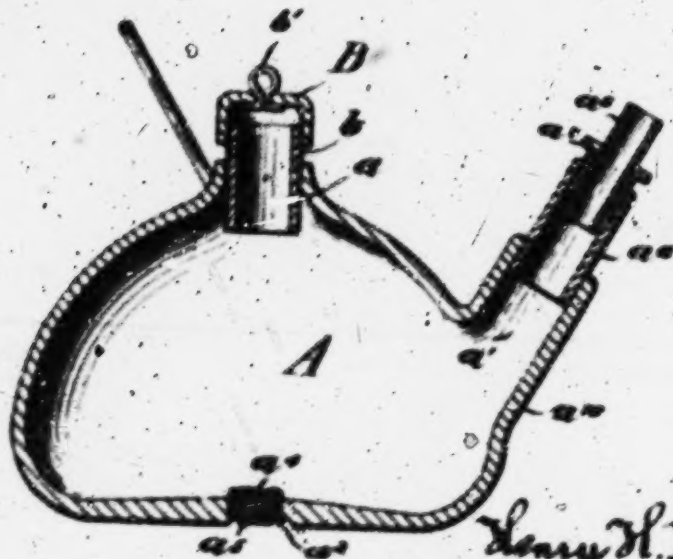


Fig. 1.

Fig. 3.



Witnesses

*Edw. H. Nichols*  
*James H. Mon*

Inventor

*Henry H. Nichols,*  
*Edward H. Nichols*

Attorney

## UNITED STATES PATENT OFFICE.

HENRY H. NICHOLS, OF PHILADELPHIA, PENNSYLVANIA.

TORCH.

1,036,514.

Specification of Letters Patent.

Patented Aug. 20, 1912.

Application filed May 14, 1912. Serial No. 697,139.

*To all whom it may concern:*

Be it known that I, HENRY H. NICHOLS, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Torches, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to oil burning torches and has for its object the improvement of such devices so as to render them safer and more efficient than at present.

In order to attain my object, I provide the torch with a heavy cast iron body in tea kettle shape, with a swiveled screw cap held against loss by means of a chain, a long wick with detachable spout whereby it can be readily removed, replaced and adjusted, and a transverse bail or handle provided with means to prevent the flame from coming into contact with the hand in carrying. The body is of such shape as to remain in stable equilibrium when deposited even on rough ground or piles of material, and the wick tube is inclined at such an angle to the body that it may be placed in the most advantageous position to clear obstructions and furnish light in difficult places.

My invention is illustrated in the accompanying drawings in which—

Figure 1 is a side view of the torch, Fig. 2 is a plan view of the same, and Fig. 3 is a vertical section on the line 3—3 of Fig. 2.

Referring to the drawings, A is the body, cast as already stated preferably of iron, cored out so as to have ample oil capacity and with three openings  $a$ ,  $a'$  and  $a''$ . Two of these openings  $a$  and  $a'$  receive nipples  $b$  and  $a'$  respectively, which are held in place in the mold and are cast into the body, so as to avoid the necessity for any further machine work or manipulation, thereby rendering the device cheap, efficient and easy to assemble. The opening  $a''$  is threaded to receive a screw plug  $a''$ , the head of which is squared or slotted and countersunk so as to be flush with the bottom of the pot or body. The opening  $a'$  is to receive the wick, and the collar or nipple  $a'$  being cast into the main tube  $a''$ , is internally threaded at its outer end to receive a flanged nut carrying the tip or wick holder  $a'$ , which may be threaded or otherwise secured on the collar  $a'$ . The parts  $a'$  and  $a'$  may be made

in one if desired, but for the sake of ease of manufacture and adjustment, I have found it desirable to make them in two parts as shown.

The bore of the tubular wick holder  $a'$  is smooth, and accurately proportioned to receive wicks of a predetermined size, clamping the same firmly against accidental displacement, and preventing both excessive flow of oil upward and the undue extension of combustion downward. To confine the oil at this point requires a good fit and in torches heretofore designed in which the spouts or wick holders have been made of pressed or cast metal without a separate holder, it has been found difficult to produce a uniformly good fit without hand work which is expensive and annoying.

The remarks applied to the wick holder are also in part applicable to the fitting for the cap, made in the form of a tube  $b$  cast into the upper opening in the body. By providing these extra parts it is possible to do the cutting and threading by automatic machine tools, very much more expeditiously and cheaply than would be possible if the weight of the body had to be handled and the openings directly tapped or otherwise worked.

Extending transversely across the top of the body is a bail C having its ends  $c$  and  $c'$  bent down and formed into eyes passing around the headed studs  $a''$  and  $a''$  which project in opposite directions from the two bosses  $a''$  and  $a''$  cast on the body. These studs are formed by supporting two wrought iron rivets in the mold, so that one end of each will be cast in the boss  $a''$  or  $a''$ . The extreme ends  $c$  and  $c'$  of the downwardly bent portions of the bail are twisted around and then bent inwardly at right angles so as to lie parallel to the main portion or handle of the bail. Cast upon the top of the body and extending in opposite directions the cap are two flanges or ribs  $a''$  and  $a''$ , the outer ends of which are integral with the bosses  $a''$  and  $a''$ . When the bail is turned up into a vertical position, the ends  $c$  and  $c'$  come into contact with the flanges  $a''$  and  $a''$ , and prevent further rotation around the studs  $a''$  and  $a''$ . It is therefore impossible for the torch while being carried to swing upon its pivots in such manner as to bring the wick W with its flame into dangerous proximity to the hand of the carrier. At the same time the bail may be



dropped toward the back of the torch so as to present no obstruction to the removal of the cap. Of course this cap requires to be swiveled as shown so that it may be unscrewed when desired.

Having thus described my invention what I claim and desire to secure by Letters Patent is:

1. A torch comprising a cast body having rounded contours and a broad flat base, with an inclined projecting tubular extension cast integral with said body, an opening cast in the upper part of the body and separately machined fittings secured in said extension and in said upper opening, for the purpose of receiving and holding a wick and a cap, respectively, substantially as described.

2. A torch having a body, an inclined tubular extension on one side of the body carrying a wick, a bail or handle secured transversely across the top of the body, and having its ends pivoted to the same, and means for limiting the backward swing of the body on its pivots with respect to the bail, whereby the approach of the torch flame to the hand of the carrier is prevented, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY H. NICHOLS.

Witnesses:

JAMES S. CLIFFORD,  
WM. D. THORNTON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."



**DEFENDANTS' EXHIBIT N**

**Patent No. 1,610,301—Torch—W. J. McCloskey—De-  
cember 14, 1926.**

Dec. 14, 1926

W. J. McCLOSKEY

1,610,301

TORCH

Filed May 1, 1925

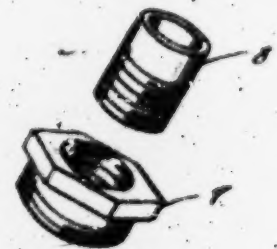
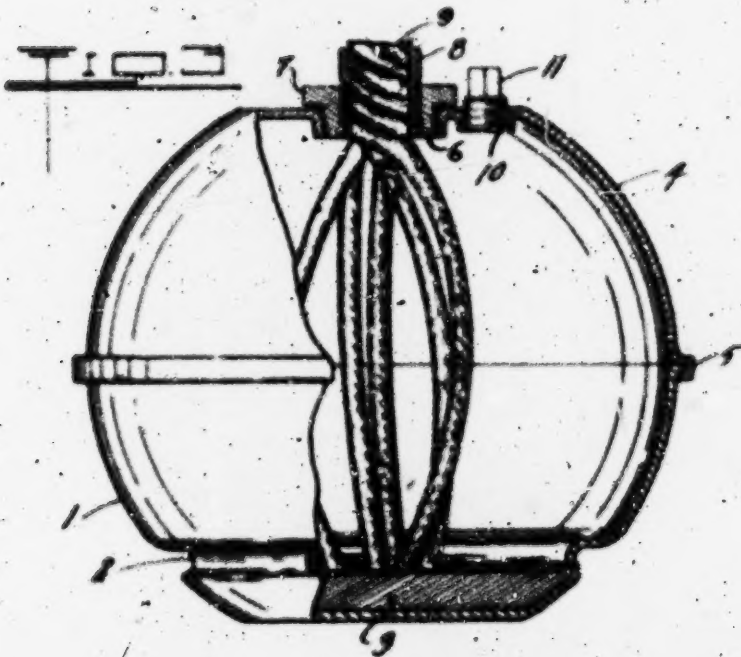
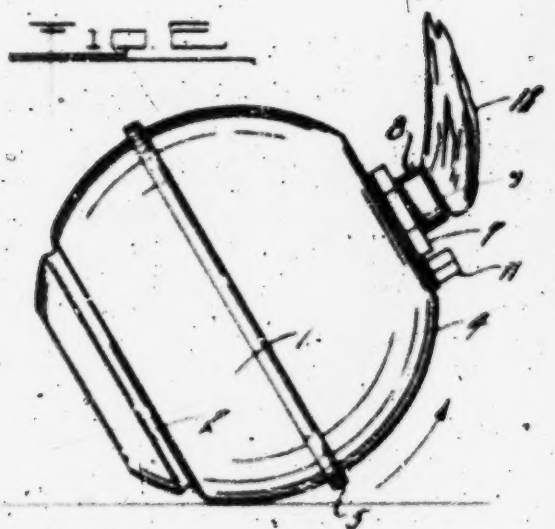
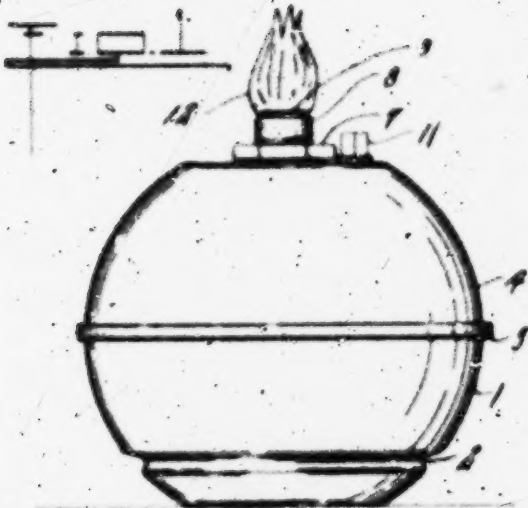


FIG. 4



Witness L. McCloskey  
INVENTOR  
BY  
J. H. Hink  
ATTORNEY

Patented Dec. 14, 1926.

## UNITED STATES PATENT OFFICE.

WILBERT J. McCLOSKEY, OF TOLEDO, OHIO.

## TORCH.

Application filed May 1, 1925. Serial No. 27,167.

This invention relates to jostling resistant and self-righting torches.

This invention has utility when incorporated in roadway excavation marking torches subject to disturbance by traffic.

Referring to the drawings:

Fig. 1 is a side elevation of a torch in accordance with the disclosure herein as in normal position;

Fig. 2 is a view of the torch of Fig. 1 as disturbed and about to swing toward self-righting or stable position of Fig. 1;

Fig. 3 is a view of the torch of Fig. 1, with portions broken away, the scale being enlarged;

Fig. 4 is a distributed view of the wick enveloping nipple and bushing; and

Fig. 5 is a perspective view of the loading element for the torch.

Reservoir member 1 is shown herein as of a bare restricting form inwardly extending with annular re-entrant leading 2 as a holder for loading 3 herein shown as a cast plate within this sheet metal lower half of this shell of the spherical reservoir structure of this disclosure. Opposing this semi-circular reservoir element 1 is spherical or dome member 4. These members 1, 4 are herein shown as united by a joint, seam, or weld 5 in the region of the maximum diameter or bulge portion of this reservoir. The dome member 4 has central inwardly threaded throat 6 which is engaged by bushing 7 having nipple 8 therein as a guide for wicking 9. Adjacent this inwardly extending threaded throat 6 is minor throat providing threaded opening 10 in which filling opening plug 11 is disposed. Upon removing the filling opening plug 11, material for combustion, as kerosene, may be introduced into this reservoir or receptacle. The wicking 9 may be worked into and through the nipple 8 to leave the desired extent of the wicking 9 protrude therefrom and then through the larger opening provided by this throat 6 of this sheet metal upper member 4, the loose wicking may be thrust and the bushing 7 assembled into locking position in the opening or throat 6.

This sheet metal unitary structure providing a vessel, is resistant against impact from horses' hoofs or vehicle wheels and when kicked, knocked, or struck will readily shift away from such source and if this be a tendency to disturb the condition of the reser-

voir as to its base, it normally is matter of but momentary disturbance, for the vessel at once is self-righting so that it will approximate the position or placing in the indicating or guarding of the excavation as in laying or repairing of tracks or pavement with flame 12 of the torch from the upper side of this vessel.

This vessel as made from sheet metal elements 1, 4, is of light weight and tough throughout. The walls are stiff against battering while the loading or weight 3 in the bottom of the vessel is of a mass sufficient to load the vessel for ordinarily rocking the vessel into its upright position for normal operation of the wick 9 for delivering by capillary attraction the kerosene for burning at the flame 12.

What is claimed and it is desired to secure by United States Letters Patent is:—

1. A torch reservoir housing comprising a dome shaped upper section, a complementary zone-shaped base section, and a load within said base section, whereby rocking of the torch is on a spherical bearing of the base section continuous in spherical curvature from the lateral bounding means of the base section as enveloping the load.

2. A torch reservoir housing comprising a dome shaped upper section, a complementary zone-shaped base section having an endless head, and a rigid load element within the housing for the base section disposed inside said base section to be there retained by said head, whereby said housing is rockably supported by said base section.

3. A torch complete in itself as to its support, said torch embodying a housing comprising a dome-shaped upper portion and a complementary zone shaped base portion, which portions together form a reservoir, said housing upper portion having an opening, a wick receiving bushing in said opening, and a loaded base anchored with the lower portion and disposed within the external radius of said housing, whereby rocking of the torch toward righting position is on a continuous spherical bearing from a tilted supporting side of said housing to a position of rest with its loaded base downward and the wick bushing upward with the housing portion throughout convex downward.

In witness whereof I affix my signature,  
WILBERT J. McCLOSKEY.



**DEFENDANTS' EXHIBIT N**

**Patent No. 1,613,819—Torch—L. W. Close—January  
11, 1927.**

Jan. 11, 1927.

L. W. CLOSE

TORCH

Filed August 6, 1926

1,613,819

Fig. 1.

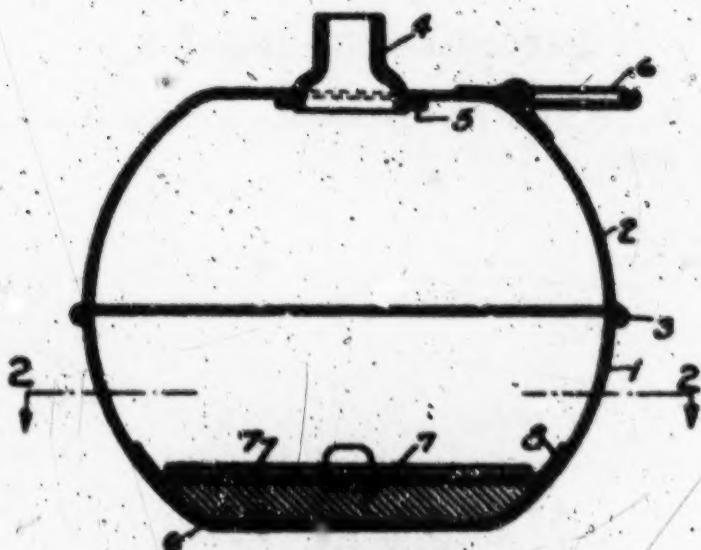


Fig. 2.

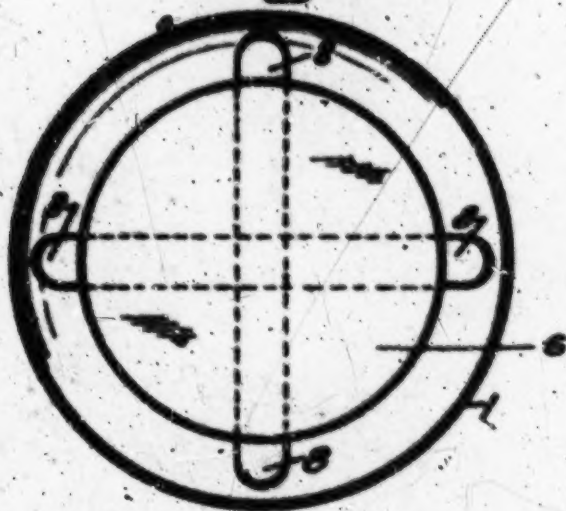


Fig. 3.



INVENTOR

BY *Lyman W. Close**Close & Co.*  
ATTORNEYS

Patented Jan. 11, 1927.

1,613,819

# UNITED STATES PATENT OFFICE.

LYMAN W. CLOSE, OF TOLEDO, OHIO, ASSIGNOR TO THE TOLEDO PRESSED STEEL COMPANY, OF TOLEDO, OHIO, A CORPORATION OF OHIO.

## TORCH.

Application filed August 6, 1926. Serial No. 127,492.

This invention relates to torches but more particularly to torches of the type used in connection with road repair or construction work for danger signals, and an object of this invention is to provide a torch with a counter weight for maintaining the torch in upright position which is mounted in the torch body in a simple and efficient manner enabling such counter weight to be fixedly secured in place readily and cheaply. Further objects and advantages will hereinafter appear.

The invention is shown by way of illustration in the accompanying drawings, in which—

Fig. 1 is a vertical sectional elevation of a torch embodying the invention; Figure 2 is a section on the line 2—2 of Figure 1; and Figure 3 is a detail sectional elevation of an alternate form.

The illustrated embodiment of the invention comprises a torch of sheet metal having a body portion formed of two parts, a base part 1 and an upper part 2. The bottom and top of the torch body are flattened and the side walls are rounded. In this instance, the adjoining edges of the top and bottom parts are seamed together as shown at 3. Formed centrally in the top of the upper part is an opening into which fits a spout or nozzle 4 screwed into a ring 5 spot welded to the inside of the torch body. A handle ring 6 may be suitably connected to the side of the torch to facilitate handling.

In torches of this character, it is highly desirable to provide a counter weight so that at all times an upright position is maintained and so that the torches are self-righting should they be knocked over. As shown a counter weight 6 is placed in the bottom of the torch body and is shaped to conform to the side walls of the torch body.

For securely holding the counter weight in place a pair of straps 7 spot welded together is embodied in the counter weight with the ends 8 projecting therefrom. The counter weight 6 may be cast around the straps so that a unitary arrangement is formed. The projecting ends 8 of the strap are bent upwardly to lie flat against the inner wall of the torch body. These ends are preferably spot welded to the torch so

so that the counter weight 6 is fixedly secured in place.

In the alternate form shown in Figure 2, the counter weight 6<sup>a</sup> is similar in shape to the counter weight 6, but instead of utilizing straps to hold it in place, a cup-shaped member 9 rests against the top of the counter weight and has its edge portions 10 bent to conform to the inner wall of the torch body. The edge portions are spot welded at intervals to the torch so that relative movement between the counter weight 6<sup>a</sup> and torch body is prevented.

While I have described my improved torch in more or less detail to comply with the requirements of this statute, it is nevertheless desired that this detailed description be considered merely as illustrative and not as limiting, and it is to be understood that changes and modifications may be made by those skilled in this art without departing from the invention as defined in the following claims.

What I claim is:

1. A torch comprising a body having a flat base and curved walls, a counter weight inside of said body and conforming to the side walls thereof, holding means extending across the upper portion of said counter weight, and upwardly bent end portions on said holding means to conform to the inside of said body, said upwardly bent portions being rigidly secured to the inside of said body thereby to hold said counter weight against movement.

2. A torch comprising a two part body, the lower part having a flat base and curved side walls, the upper part having curved side walls and a flat top, a seam connecting said parts together, a nozzle in the top of said upper part, a counter weight in said lower part having sides conforming to the shape of the side walls of the body, straps embedded in said counter weight, and upwardly bent end portions on said straps projecting beyond the ends of said counter weight and lying flat against the body, said bent end portions being secured to said body.

3. A torch comprising a two part body, the lower part having a flat base and curved side walls, the upper part having curved side walls and a flat top, a seam connecting said



parts together, a nozzle in the top of said upper part, a counter weight in said lower part having sides conforming to the shape of the side walls of the body, a retaining member engaging the upper portion of said counter weight and upwardly bent edges on said member conforming to the shape of the

inner walls of said body, said upwardly bent edges being rigidly secured to said body thereby to retain said counter weight in place.

In testimony whereof I have hereunto signed my name to this specification.

LYMAN W. CLOSE.

## Read what some of the users say

TOLEDO TORCHES make an excellent danger signal to protect work and are not carried away like lanterns.

A. G. Sherwood  
Independence, Kan.

"In the time we have been using TOLEDO TORCHES we have not had one and have never found one of them not burning in the morning, notwithstanding the fact that we have had several severe wind and rain storms at night."

F. A. Flannagan,  
Shawnee County Hwy. Dept.  
Topeka, Kan.

"We like TOLEDO TORCHES because they stay with us. They are right there all night, every night, and after six months we still have our original six dozen. They do their stuff. We just fill 'em, fire 'em and forget 'em."

A. K. Erb,  
State Road Commission of  
West Virginia.

"We never had one blow out when torches are lighted at night. We find them economical to use as there is absolutely no breakage and no chimneys to buy and not any spilling of oil caused from being blown over."

O. R. Huntley,  
Toledo, Ohio.

TOLEDO TORCHES are a great improvement over the old type of lanterns, in the saving of globes and creating a great deal more attention, on account of its characteristic flickering.

Kalamazoo Power & Traction Co.  
Kalamazoo, Mich.

"The TOLEDO TORCH is far superior to the old-fashioned lantern and we like it very much."

Central Maine Power Co.  
Waterville, Me.

"We find TOLEDO TORCHES are much more satisfactory than lanterns, in that half the time the lantern chimney is so black with soot, no light is given out to do much good. There is so much light thrown out by the torch, it enables one to see what it's all about."

R. J. Cartledge,  
City of Greensport, N. C.

"After having more than twenty years of experience in protecting open trench work with red lights, white lights, and I dare say, all lights, am willing to say TOLEDO TORCH lights are the best."

H. Freeman,  
J. B. McCray Eng. Corp.  
Miami, Florida.

"With all due regard for honesty, I can truly say that as a high-way torch for barricades or danger signals there is nothing on the market to equal THE TOLEDO TORCH."

Roy H. Schultz,  
County Surveyor  
Packing, Ohio.

"We are very well satisfied with the TOLEDO TORCHES as there are no globes to get broken and the torches are not as easily carried off as lanterns."

Globe Construction Co.  
Wichita, Kan.

"We find the TOLEDO TORCH to be very desirable for our work and find they will burn for about thirty-two hours on one filling and will also burn in any wind or rain."

P. F. Connelly Paving Co.  
Little Rock, Ark.

TOLEDO TORCHES are a decided improvement over the red lantern, both in efficiency and economy. I expect to use them exclusively on my work in the future."

L. D. Harper,  
Rocky Mount, N. C.

"For the safety of the travelling public, I think TOLEDO TORCHES offer a better safeguard than lanterns as they are visible for a greater distance and are much more conspicuous."

C. N. Johnston,  
S. K. Jones Const. Co.  
Memphis, Tenn.

"The greatest advantage I find in using the TOLEDO TORCHES over the red lanterns comes in the form of having the travelling public respect your property rights."

Alex. Jeffry,  
Saginaw, Mich.

"This past summer has been a very good summer to test out torches because of the amount of hard rain, hail and winds and the TOLEDO TORCHES have always gone through every storm and still be upright and burning in the morning."

O. T. Tyler Const. Co.  
Blackwell, Okla.

"Your lights are fool-proof. We have no reports of any of these lights having been stolen."


Dicus Brothers,  
Waynesville, N. C.

"Have put the TOLEDO TORCH in operation in all kinds of weather and find it far superior to the old-fashioned lantern."

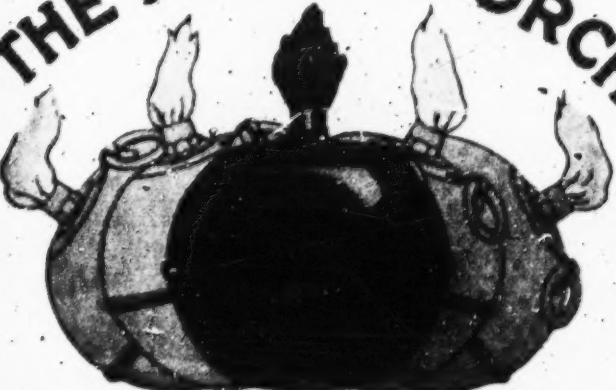
Band Springs Ry. Co.  
Band Springs, Okla.

DEFENDANTS' EXHIBIT O  
Whole Circular of Plaintiff's Exhibit 8

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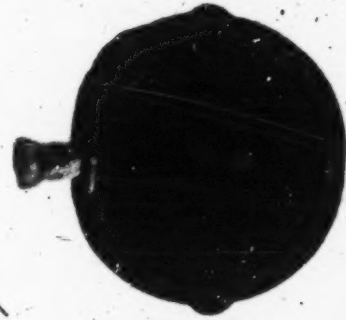
**THE TOLEDO TORCH**



PAT. JAN. 11, 1927

**RIGHTS ITSELF  
FROM ANY POSITION**





# THE TOLEDO TORCH "STANDARD"

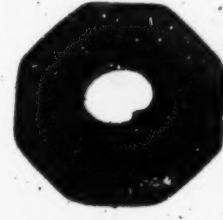
Adopted by the Highway Departments of over half these United States, hundreds of counties, cities and public utilities, and many thousands of far-sighted contractors in every section of the country. Approved and recommended by U. S. Fidelity & Guaranty Co. Awarded AGC Seal for Successful Performance.

THE TOLEDO TORCH will give you greater protection than you have ever had before and at lower cost. Burns with a distinctive light. Attracts and holds attention in competition with all other road lights. Has greater visibility. Completely illuminates the danger zone insuring utmost protection against accidents.

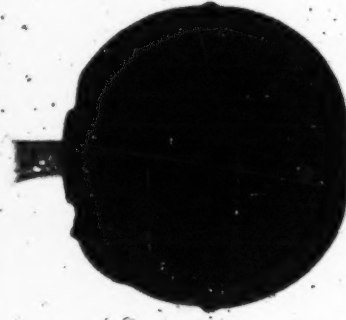
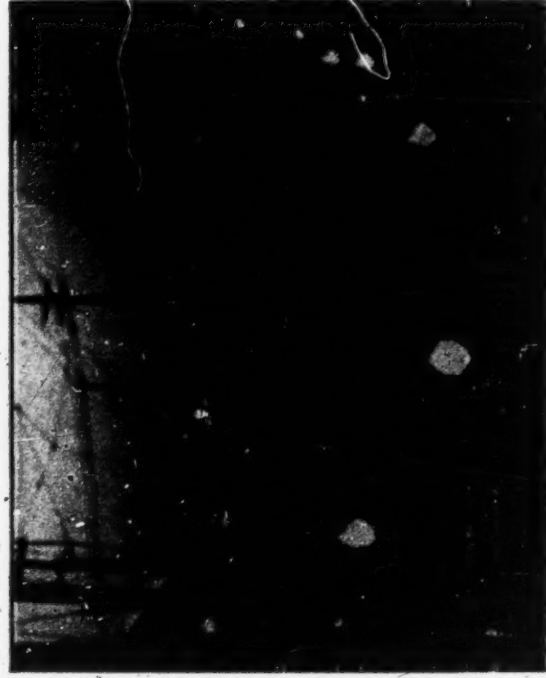
Its snappy self-righting action holds it to a given location. Can't tip over. Can't roll. It is reliable and safe.

## IMPROVED BURNER

All TOLEDO TORCHES are now equipped with a burner which greatly improves its performance. No projecting parts to break. In-



sure constant flow of oil at right temperature. Correct length of wick projection always assured. Prevents back-slippage and loss of wick inside of torch. Inter-changeable with all previous models. The secret of all-weather dependability.



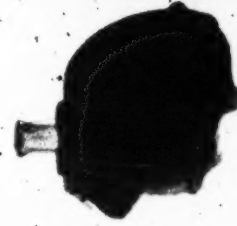
## THE TOLEDO TORCH "SPECIAL"

Same general features as the "STANDARD," self-righting, unbreakable, theft-proof, storm-proof, safe.

A much heavier torch than the "STANDARD," made of 15 gauge steel. Has a welded seam. Capacity three quarts, weight 6 1/2 pounds. This torch is recommended for abnormally rough usage.

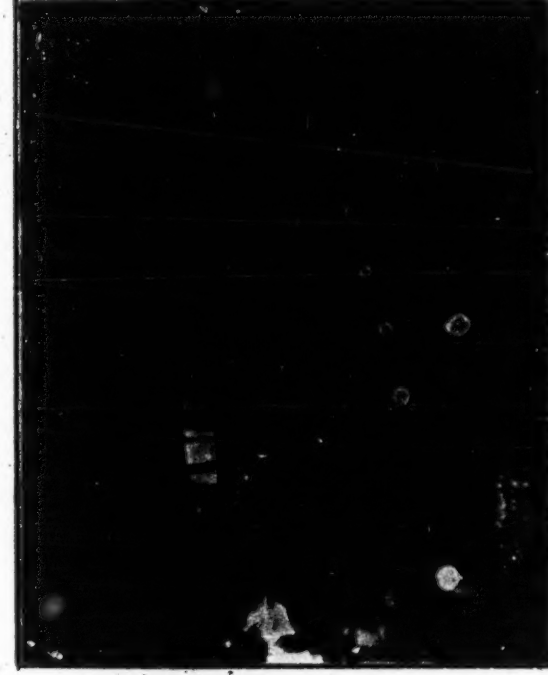
### Ownership Nameplates

may be welded on all torches at the factory, at an additional cost of \$1.25 per dozen.



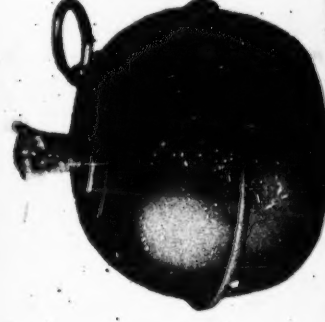
### REPLACEMENT WICKING

Same as original equipment. Proper quality, full length, one dozen per box.



## Signal-ite

NOT  
SELF-RIGHTING



This low priced torch is intended for service where it will not be subjected to the hazards of moving traffic. It is especially suitable for use by electric railways where it can be deposited between rails and similar positions. It is not enamelled like the TOLEDO TORCHES. You may color it to suit yourself. Capacity three quarts. Weight 2 1/2 pounds.



PROCEEDINGS IN THE  
UNITED STATES CIRCUIT COURT OF APPEALS  
FOR THE SIXTH CIRCUIT

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CAUSES ARGUED AND SUBMITTED

(November 9, 1937—Before: MOORMAN, SIMONS  
and ALLEN, JJ.)

These causes are argued by W. P. Bair for Appellants and by Wilber Owen for Appellee and are submitted to the Court.

DECREE—No. 7271

(Filed December 7, 1937)

Appeal from the District Court of the United States for the Northern District of Ohio.

This cause came on to be heard on the transcript of the record from the District Court of the United States for the Northern District of Ohio, and was argued by counsel.

ON CONSIDERATION WHEREOF, It is now here ordered, adjudged and decreed by this Court that the decree of the said District Court in this cause be and the same is hereby reversed and the cause remanded with instructions to dismiss the bill for want of invention.

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**OPINION**

(Filed December 7, 1937)

Before MOORMAN, SIMONS and ALLEN, Circuit Judges.

SIMONS, Circuit Judge. The Withrow and Close patent in suit, No. 1,732,708, issued October 22, 1929, relates to construction torches and truck flares for use as outdoor warning signals and adapted to emit luminescent flame protected from wind and rain. The appellants are dealers in flares competing with those made under the patent, and appeal from decrees sustaining its validity and granting relief for its infringement.

The only difference between a torch and a flare seems to be one of size. The former is intended for the contracting industry and is set out to guard street obstructions at night. A flare is for the use of trucks when they are temporarily halted at night upon the

*Opinion*

road. The invention, if any there is, lies in the construction of the guarded burner.

The bomb-shaped excavation torch, weighted against upsetting, with flattened bottom and a wick receiving opening in its top, was already old when this court in the light of prior art denied validity to McCloskey patent 1,610,301, in 1929, *McCloskey v. Toledo Pressed Steel Co.*, 30 Fed. (2d) 12. The appellee had, however, built up a substantial business in the open flame bomb-shaped torches of the McCloskey type before the present patent was granted. Although it claimed for such torches capacity to burn in all kinds of weather, it now says that numerous complaints of their extinguishment by wind and rain led the present patentees to the long series of experiments and tests extending over a number of years which resulted in the burner and guard which is the subject matter of the patent in suit, that the device has successfully met the requirements of contractors and State Highway Commissions, has sold in large volume, has been the subject of license to several manufacturers, and has been copied without license by the manufacturer defending the present suits.

We see no patentable distinction in the many claims in suit, however they may be differentiated from each other, were the issue solely one of infringement. The elements of Claim 1, which relate to the guard or cap, require that it be disposed on the outer side of the torch body to enclose the outer end of the wick, that it have an imperforate upper wall, lateral flame openings, and air openings below the flame openings. Other claims variously describe these cap elements. Claim 2 recites the flame openings as adapted to emit luminescent flame, and designates the cap as a flame guard for the wick. Others speak of an outwardly extending flange in the region of the wick opening to which the cap is connected, and still others as having the bottom of the cap in heat conducting relation to the flange, or in heat transferring relation to the flange.

Stripped of variations in nomenclature, and in the ingeniously differentiated phrases of counsel in setting forth the claims, the invention is for a burner with a metal guard to protect the flame from air currents and rain. The art is full of illustration and description of metal guards for burners, typical of which are the patents to Almond, No. 193,796; Blake, No. 453,335;



## Opinion

Kahn, No. 1,755,527; Heston, No. 270,587, and Hathaway, No. 147,496. The challenge to their pertinence must be repelled. There is sufficient suggestion in a burner guard when it is found in one familiar contrivance to point the way to its use in another. We have often observed that where an art is a specialized development of an older art the offspring is entitled to the previously disclosed useful characteristics of the ancestral estate. *Dunham Co. v. Cobb*, 19 Fed. (2d) 328; *Page Steel & Wire Co. v. Smith Bros. Hardware Co.*, 64 Fed. (2d) 512. A mere change in environment is not patentable unless invention may be found in the concept of the adaptation. *Willett Mfg. Co. v. Root Spring Scraper Co.*, 55 Fed. (2d) 858 (C. C. A. 6). In *Lake-wood Engineering Co. v. Walker*, 23 Fed. (2d) 623, invention was found in the adaption of an element from a wholly unrelated art where differences in size, weight, strength, purpose and manner of use were such that no effective suggestion could have been furnished by the old device. Even there the question was recognized as close, and we have indicated that beyond that we ought not to go. *Page Steel & Wire Co. v. Smith*, supra.

Once again support for validity is sought in demonstration of commercial success. We have seen that the plaintiff was already a successful manufacturer of open flame flares and torches before the alleged invention was made, extensively advertised as possessing the identical virtues of the device of the patent. Acceptance of licenses where royalty is relatively insignificant does not of itself establish patent validity, *Firestone Tire & Rubber Co. v. U. S. Rubber Co.*, 79 Fed. (2d) 948, since as against strong manufacturers competitors frequently find it more expedient to yield to the claims of a doubtful patent than to undertake the expense and trouble of patent litigation. There is here no substantial evidence of effort general to the industry to solve a problem which long defied it. The proof is limited to experiments of the patentees, and so far as it goes it serves to demonstrate lack of awareness of the teachings of the art rather than the inherent difficulties of the problem itself. They chose the long road to solution, and the patent law does not reward mere persistence, unassociated with original creative effort.

Decrees reversed. Causes remanded with instructions to dismiss the bills for want of invention.

**PETITION FOR REHEARING**

(Filed February 12, 1938)

**IN THE  
United States Circuit Court of Appeals  
FOR THE SIXTH CIRCUIT**

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No. 7271

STANDARD PARTS, INC.,

*Defendant-Appellant,*

vs.

THE TOLEDO PRESSED STEEL Co.,

*Plaintiff-Appellee.*

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No. 7272

HUEBNER SUPPLY COMPANY,

*Defendant-Appellant,*

vs.

THE TOLEDO PRESSED STEEL Co.,

*Plaintiff-Appellee.*

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**PETITION FOR REHEARING**

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May It Please the Court:

We respectfully ask rehearing of this cause (with oral argument if it may be thought proper) not,—we must admit,—upon any distinctly new ground, but be-

cause we hope that the fundamental question may be further considered, as being properly dominated by a point of view not specifically urged in the briefs on file and not discussed in the opinion of the court.

### THE STATE OF THE ART

The fundamental question obviously is, "In view of the existing burner art, did the patentees' changes amount to invention?" In other words, "Were their changes such as would probably have occurred to a man skilled in this art, if his attention had been drawn to the need which the changes first supplied?"

The court thought that when the need of protecting the McCloskey flare from wind and rain was observed, it would have been fairly natural, if not obvious, to apply to the McCloskey flare the shields of the burner art. If so, and if, so applied, with only obvious modifications, they would have served the purpose, the court's conclusions were of course correct.

The somewhat new point of view(\*) which we now present is this: For the man who saw the need of this protection, the natural first thought would have been (a) to make the flame bigger and so more stable, or (b) to protect it by a shield. The first (a) was tried by extending the blazing part of the wick to be  $1\frac{1}{2}$  inches or more. This failed; the flame continued unstable. The second (b) being thought of, would be at once rejected because the shields would be so plainly useless, or worse, that it would be a waste of time to try to modify and adapt them.

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(\*) Entirely new, so far as express words go.



Remembering that the sole utility of the McCloskey flare was to present to the oncomer who needed warning a bright, strong flame, it may well enough be that to put over the top, to protect from the rain, some sort of a hood or mushroom top, would have been a natural thought. Perhaps this could be made so that it would not interfere very much with the burning of the flame, and since the warning was to be given more or less horizontally, a shield over the top would not interfere with the vision of the driver to be warned. As to a side shield, the situation was very different. The wind may blow on all sides and so a side windshield must go all the way around; and it apparently would have been the first (or second) thought of everyone—as it seems to have been in fact the first thought—that a side shield **could not** at the same time keep the wind from getting in from the outside and permit the light to come out from the inside. Ordinary material which would keep the wind out would keep the light in. The only material which would do both is glass, and glass chimneys were notoriously not only unsuitably fragile, but they were inefficient in a wind both because they would become covered with soot and, being open at the top, the flame would almost immediately blow out,—leaving for consideration only metals. Without much doubt, the ordinary mechanic would therefore have said, “The idea of putting a metal windshield around the McCloskey flame is foolish, because while the flame might be kept burning, it would do no good.”

If this view is correct, it results that the patentees followed the normal thought of the skilled and intelligent mechanic when, seeing and appreciating the need,

they tried experiment after experiment to satisfy that need, instead of turning to the known art now said to be analogous. To come back eventually to the side shield and to succeed in modifying it so that, under the circumstances of its needed application, it would perform the paradoxical functions of excluding the wind and rain but not obstructing the useful vision, was the course which had seemed to be exactly the thing **not to do**, but to which they were eventually driven by failure to find any other way. To use the simile from the court's opinion, "They chose a long road to the solution," because they saw, on what the court now regards as a short and easy route, the sign "**No Road—Detour.**"

The cases are familiar which have held that when what the patentee eventually did was to abandon what seemed to be the obvious and adopt and perfect what seemed to be, or was believed to be, impracticable or forbidden, and thereby succeed,—that is strong, if not rather conclusive, evidence of the inventive character of what he did. Some cases are cited in the footnote. (\*)

(\*) The principle has been stated times without number, by many courts. Two of the latest restatements by District of Columbia tribunals are:

In *Re Delaney*, 62 F. (2d) 838, 840, the Court of Customs and Patent Appeals said:

"It is our opinion that one skilled in the art, upon examining the references, would be directed away from appellant's composition rather than toward modifying the proportions therein set forth to produce appellant's composition."

In *Ex Parte Hecht*, 19 U. S. Pat. Q. 161, 163, the Board of Appeals said:

"While it may be true as indicated by the examiner that to merely exercise the reasoning faculties with respect to well known properties of matter in working out desirable results may not involve invention; yet when one as by inspiration is led to reverse the natural order of things and to depart from the dictates of his reasoning faculties and by so doing produces a new, useful and unexpected result, he makes an invention."

But if, in spite of the natural rejection of the idea of using a side shield, they had turned away from vision signals and gone to the cook stove and other burner art for shields, what would they have found? The opinion of the court specifies those references which seemed most pertinent.

Before considering these, we note that the court referred to the **Land Roller** and **Road Scraper** cases as indicating the propriety of resort to these burners. In the **Land Roller** case we find the reference to the "ancestral estate"; in the **Road Scraper** case to the "environment."

These warning flares are in the direct line of descent from the Greek torch and the Roman lamp. The heater for the baby's milk (Almond) and the flash igniter for the cook stove (Kahn) are no part of this ancestral family. They are, at the best, rather remotely related,—not even next of kin.

In the **Road Scraper** case the court said:

"It is true that where the availability of the old device to use in the new environment is not obvious either because of intrinsic differences in the quality of the operation to be performed, etc.,  
\* \* \* invention may be found in the mere concept of such availability to useful service in the new and different environment." (P. 859.)

In the instant case, as we view it, the invention was both "in the mere concept," and also taken beyond such mere concept, for it required essential modification. Clearly, there were "intrinsic differences in the quality of the operation to be performed"; the qualities were not merely different, they were antagonistic.

It should be noted also that heaters and torch flares, even if they have a family relationship, operate by dif-



ferent methods to produce different results. It should be noted also how the shield-flame relationship is reversed. In the old burner art cited by the court the shield is used to surround that flame which is to be protected. In the patentees' device in actual operation, the flames come out from the large openings in the cap and unite into one large flame which surrounds all the upper part of the cap or shield. In some instances at least of the earlier burner art, the shield surrounded and protected the useful flame; in the patentees' device, the shield protected only the source of the flame while the useful flame was outside the shield. This reversal of function typifies the lack of interrelationship between the burner art and the patented device.

We venture to ask now a little further attention by the court to these old burners, and we endeavor not merely to repeat what was said before, but to add a new thought,—in the hope that it may be enough to turn the scale. As to each of these references, before it can be held sufficient to indicate non-invention in the patent in suit, the double question must be asked, and answered affirmatively:

“(a) Was it natural for the patentees to think of it when confronted by their problem; and

(b) If so, did it, without more, furnish the solution which they reached?”

Turning now to these references for an answer to our double question:

**Almond** is a heater, not a lamp. Defendant's expert said (R. p. 109) that he had not built a model of Almond because he did not want a heater. Almond burns vapor

to create a blue flame. If there is any luminescent flame upon the tip of the wick, it cannot be seen, and it is intended to be negligible in amount. Almond says (second column, p. 242):

"In other words, the flame is reduced to the bare possibility of existence, but not entirely stifled, and is thus utilized as a means of vaporizing all that part of the fuel which, were it not for the lack of draft referred to, would be directly ignited on the wick."

He then states that the vapors thus created are mingled with fresh air and so will produce a perfect heating flame,—obviously non-luminous. In his fourth claim he describes the space inside of his outer shield G as "arranged to constitute a combustion chamber for vapors and gases" which come out from the inner tube. But, however Almond is to be classified, he did not have any shield which was intended to, or could, prevent the wind from getting in but let the flame out, to be seen by one approaching. What seems to be the shield, in looking at his drawing, is the outer tube G. This is really a combustion flue. He says it is intended to direct the heat upward against whatever is held above by the brackets. The patentees did not take this shield (flue) or any modification of it and transfer it to the old torch. For that purpose it would be useless, because it would substantially shut off the vision of one approaching, so it could not serve as a warning, and, being a mere chimney, the flame would doubtless blow out as with any lamp chimney. Certainly the shield or tube G is no ancestor of the patentees' device; and, conceding that, defendant's counsel and expert have been ingenious

enough to find another shield in Almond,—though on looking at the complete device in use, or looking at the drawing of the patent (R. p. 241), we would never think of it. The drawing shown at the end of defendant's brief (which omits the real shield) is something that the patentees never had seen, and would not naturally find in the patent drawing. Almond himself disclaims this mutilation, for he says (p. 243) that without the tube G satisfactory results will not be obtained. But even if we accept this drawing (corrected as it should be as shown by plaintiff's brief opposite page 39), we do not find the patentees' shield in purpose, form or result. The **purpose** is to create heat and concentrate it and carry it up the flue rather than to create a visible signal flame. The **form** is such that the openings are too minute to permit a substantial body of flame to escape. Indeed, the substantial body of flame to be protected from the wind is formed outside of this cap and if not protected by the shield G would at once blow out,—thus demonstrating that the comparable part of this device is the outer tube G. In **result**, no visible flame or useful signal is produced and nothing that would withstand wind or rain. The "qualities of the operation to be performed" give us different problems of vapor mixtures, producing heat or light, wind protection, carbon or soot deposits, etc.

There is no proof that the structure of Almond,—either as shown in the patent or with the tube G as shown in defendant's drawing,—would be of any use as an outdoor flare. It is fairly apparent that under outdoor conditions it would not stay lighted efficiently unless the patent disclosure were modified by later knowledge; and



this was the opinion of the only witnesses who had practical experience (Rec. pp. 133, 137).(\*)

**Blake.** Here again we have what is really (like the inner chamber in Almond) a vaporizing chamber and not a guard or shield to keep the wind out and let the light escape. There is no wick. The fluid permeates the absorbent material and is heated and reaches vaporizing temperature. Minute jets of vapor are shot horizontally out of the registering openings in the outside wall of the chamber and are ignited after they get outside the chamber. The device may be operated with a previously formed gas as well as by vaporizing liquid fuel. Whether the jets of flame would unite in one large flame, or would continue as separate jets, is not important: in either case the flame would doubtless be blown out at once by a high wind. Air inlets and flame outlets were not proportioned with any idea of maintenance in a strong wind. To apply this cap or shield to the McCloskey flare would require it to be substantially reorganized and then used to produce materially different results, not contemplated by Blake.

**Kahn** was not intended or adapted to produce and maintain a body of flame suitable for a permanent signal. It was a flash igniter. It involved a constantly burning pilot light which, when gas pressure was increased, would develop into horizontal jets of flame so as to ignite adjacent burners in a gas stove. The hood or cover was not needed to protect the jets of flame which were

(\*) This was indeed the only evidence on the point. True, defendant's witness testified to the successful use of defendant's Exhibit G which he said was "a model of the Almond patent" (131); but by the testimony of defendant's expert Vandevanter, who produced this model Exhibit G, it appeared (p. 112) that it did not truly represent the Almond patent in controlling particulars.

projected momentarily outside the cap. It would of course protect the pilot light to some extent in the quiet atmosphere of the room where the stove was situated, but it would be useless in a wind. Nor was it intended or adapted to create and maintain a body of flame suitable for a signal. It served no such purpose. To apply this cap or hood to the old McCloskey flare would only put out the flame.

**Heston.** This again was a vapor burner and like Kahn was essentially a pilot light device. The part which might perhaps be superficially thought of as a shield or guard, serves no such function. It comprises two caps; one over and upon and adapted to revolve upon the other; there are holes in each, and by the revolution of the outer upon the inner, the registration between the holes is regulated. Thereby the size of the issuing gas jets is determined. Neither in construction nor function do these caps suggest the shield of the patent in suit.

**Hathaway.** This again is a vapor burner and the fuel is vaporized before ignition. It also makes a flame by minute horizontal radiating jets. The cap or cover seems not even remotely to suggest the patentees' cap. The lamp was of course not designed to be maintained in the wind. The cap has lips extending horizontally outward near the gas jets and so giving some measure of protection from slight drafts. The cap does not suggest the patentees' device either in form or function.

We do not go beyond the early art which the court specially mentioned, for the others come no closer, indeed, Almond was the one chiefly relied upon by defendant. As to all these references, answering our suggested double question, is it not rightly to be said both

that one seeking to develop in a kerosene burner of the wick feeding type a strong and permanent outdoor flame would not naturally turn to small blue flame heaters, or to gas or vapor burners, intended for indoor use, being kept from such resort by the **prima facie** impossibility of a metal shield which would obstruct the wind but not the vision, and because the "qualities of the operation to be performed" were so different; and also to be said that if the thought of such resort had been followed out the patentees would have found that no one of the vapor burners furnished a cap which could have been used upon the McCloskey flare to produce the flare of the patent in suit, without substantial reorganization?

Upon the trial defendant built up its case of non-invention by the supposition that one or another of the caps or shields of the references might be united with the old McCloskey flare to produce the flare of the patent in suit. The burden of proof was on defendant, and it would have been naturally expected that defendant would have built these combination structures and proved that they would work. Nothing of the kind was done. The proposed combinations were not made very clear until by the sketches at the end of defendant's brief in this court. We are informed that since the decision of this court elaborate and careful tests have been made with devices constructed precisely as shown in each of the figures of this sheet of drawings, and that each one of them has proved to be a complete failure in the respects in which the device of the patent in suit has been completely successful, that is, in producing a strong and effective luminous flame which will maintain itself for a long time against the otherwise destructive results of



wind, rain and carbon deposits. It is hoped that, at least, a further hearing may eventually be had, permitting the introduction of this evidence to demonstrate what is now only inference as a matter of opinion from observation of the patents and drawings; but which inference is believed to be even now sufficient in view of the rule as to the burden of proof.

**PRIOR EFFORTS AND FAILURES FOLLOWED BY  
UNIVERSAL ACCEPTANCE OF THE PAT-  
ENTED DEVICE**

Upon such a record as this, proof of long standing need, of prior effort and failure and of complete success and universal acceptance of the patentees' device, is very commonly thought to be a sufficient demonstration of the presence of invention. We respectfully urge that plaintiff's proof upon this subject was sufficient to entitle it to the conclusion that there was invention. Here again, we are informed that material and persuasive evidence of prior effort and failure has been discovered recently under circumstances that sufficiently explain the lack of earlier discovery, and it is believed that this will justify giving plaintiff an opportunity to present this proof in the trial court; but upon the present record as it stands, we urge that the proof is sufficient.

We suggest that the opinion unduly minimizes the extent of the difficulties and user dissatisfaction pertaining to the old McCloskey form. It is true that plaintiff advertised its old torches as being very good and in its advertising put the soft pedal on the operating difficulties which eventually drove it off the market, when it was compared with something better; but there are few

manufacturers who do not offend in this way, and it can hardly be intended to say that such advertising satisfies the mind that there is no invention in an improvement which displaces the original.

The sheet metal open flame bomb torch of the McCloskey type, although it had precedessors, was the first thing of the kind that went into large commercial use, and this began in 1925-26. The only early competition was between this plaintiff and the McCloskey Company after they ceased joint relations. It can hardly be doubted that the difficulties, which the testimony shows, became almost at once apparent so that the need for better protection of the flame at once came into existence as an obvious need. Plaintiff's earliest competitor, other than McCloskey, was the Dietz Company, the largest manufacturer in the country of lanterns and similar things. During a period of two or three years the plaintiff was engaged in effort after effort, all unsuccessful, to meet this need, yet Dietz brought out an open flame torch in 1928. The need was so obvious that it is rightly to be presumed (though the present record does not expressly show it) that these competitors would have been trying as plaintiff was to satisfy the need. There is nothing to indicate that either of them, or anyone else, succeeded. No one thought of going indoors and trying to borrow something from heating burners; or if anyone thought of it, he did not succeed.

When plaintiff's improved device came on the market, it superseded everything else. It was copied by McCloskey and Dietz. Other manufacturers, who from time to time appeared, took licenses. Still others, who did not take licenses, copied the improvement. The

record justifies the conclusion that within a short time after the appearance of this improvement it took entire and exclusive possession of the market, and no one any more makes or sells the open flame torch or flare. Such a complete acceptance by the public and by all competitors of the improved and patented form of the device is unusual, and we feel justified in suggesting that it was not completely appreciated by the court.

### CONSTRUCTION OF PATENT

In reaching the conclusion that the patent was invalid, the court gave it a very broad construction, disregarding any limitation expressed or inherent in the claims. We urge that quite another view is justified. Even if we were to acknowledge the shield of the patented device as the legitimate descendant of the heater burner shields, still it has been transformed by such size, spacing, arrangement and proportions of the openings for the admission of air and the emission of flame as to perform another and contrasting function in a different way. Quite surely, the height and diameter of the cap, the area of the lower air openings, the proportion of the cap cut away opposite the flame, all conduce to the luminosity of the flame, its permanence, and the absence of carbon deposits. True, these essential elements are not literally specified in the claims, but they must be read in, to the extent that will make the device operative in the manner described. The specification says (ls. 78-88, p. 1) that the air inlet ports are restricted so as to admit only the air necessary for combustion, all making a larger flame but decreasing oil and wick consumption. "Substantially as described" usually inheres in every claim,



to the extent necessary to make it interpreted by the specification.

There is another feature in which plaintiff's patent is prejudiced by assuming that the claimed invention is only of the very broad character stated in the opinion. This may be developed by observing the statements in the advertising literature of two infringing devices (R. pp. 197, 203) that flares precisely like the patented device operate really as kerosene carburetors. This is because the heat of the flame is by the cap and flange construction conducted back to the wick tube at its upper end and thus the oil is heated to the point where a large part of it, but not all, vaporizes before burning. These devices therefore are, like the patent, combined wick and vapor burners. Even if some of the claims should be construed as not limited so as to distinguish from the prior art, yet we find that claims 11 to 14 are limited to this heat conducting construction, and the specification clearly points out (R. p. 157, lines 68-78) that the device has this combined function. The use of a cap or shield adapted to promote this function and in connection with any apparatus which calls this combined function into existence is, we contend, entirely new. We think Almond is the only instance which defendant claims to be of this character and Almond is sufficiently distinguished by its discussion elsewhere.

Respectfully submitted,

OWEN & OWEN,  
*Solicitors for Plaintiff-Appellee.*

ARTHUR C. DENISON,  
WILBER OWEN,  
*Of Counsel.*

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**CERTIFICATE**

I hereby certify that in my opinion the foregoing petition is well founded in law, is based on the record and is not made for purposes of delay.

WILBER OWEN.

**ORDER DENYING PETITION FOR REHEARING**

(Filed March 16, 1938)

The petition for rehearing is hereby denied.

**UNITED STATES CIRCUIT COURT OF APPEALS  
FOR THE SIXTH CIRCUIT**

I, J. W. MENZIES, Clerk of the United States Circuit Court of Appeals for the Sixth Circuit, do hereby certify that the foregoing is a true and correct copy of the record and proceedings in the cases of *Standard Parts, Inc. v. Toledo Pressed Steel Company*, No. 7271, and *Huebner Supply Company v. Toledo Pressed Steel Company*, No. 7272, as the same remains upon the files and records of said United States Circuit Court of Appeals for the Sixth Circuit, and of the whole thereof.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the seal of said Court at the City of Cincinnati, Ohio, this 26th day of April, A. D. 1938.

J. W. MENZIES,

*Clerk of the United States Circuit  
Court of Appeals for the Sixth  
Circuit.*

(SEAL)



[304] [Stamp:] Supreme Court U. S., Office of the Clerk,  
Received Jun. 14, 1938.

THE SUPREME COURT OF THE UNITED STATES, OCTOBER  
TERM, 1937

No. —

THE TOLEDO PRESSED STEEL COMPANY, Petitioner,

v.

STANDARD PARTS, INC., Respondent

No. —

THE TOLEDO PRESSED STEEL COMPANY, Petitioner,

v.

HUEBNER SUPPLY COMPANY, Respondent

ORDER

On consideration of the application of counsel for Petitioner in the above-entitled causes, and good cause therefor having been shown, it is now here ordered that the time within which a petition for a writ of certiorari may be filed herein be, and the same is hereby, extended until July 1938.

J. C. McReynolds, Associate Justice of the Supreme Court of the United States.

(6470)

SUPREME COURT OF THE UNITED STATES, OCTOBER TERM, 1933

No. 166

ORDER ALLOWING CERTIORARI—Filed November 21, 1933

On Petition for Writ of Certiorari to the United States  
Circuit Court of Appeals for the Sixth Circuit

A petition for rehearing having been filed in this Court upon the denial of a petition for writ of certiorari;

Upon consideration thereof, it is ordered by this Court that the said petition be, and the same is hereby, granted.

And it is further ordered that the order denying certiorari be, and the same is hereby, vacated; and that the petition for writ of certiorari herein be, and the same is hereby, granted.

And it is further ordered that the duly certified copy of the transcript of the proceedings below which accompanied the petition shall be treated as though filed in response to such writ.

SUPREME COURT OF THE UNITED STATES, OCTOBER TERM, 1933

No. 167

ORDER ALLOWING CERTIORARI—Filed November 21, 1933

On Petition for Writ of Certiorari to the United States  
Circuit Court of Appeals for the Sixth Circuit

A petition for rehearing having been filed in this Court upon the denial of a petition for writ of certiorari;

Upon consideration thereof, it is ordered by this Court that the said petition be, and the same is hereby, granted.

And it is further ordered that the order denying certiorari be, and the same is hereby, vacated; and that the petition for writ of certiorari herein be, and the same is hereby, granted.

And it is further ordered that the duly certified copy of the transcript of the proceedings below which accompanied the petition shall be treated as though filed in response to such writ.